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B. Pharmacy (Semester - V) (CBCS) Examination: Oct/Nov-2022
MEDICINAL CHEMISTRY - II

Day & Date: Friday, 27-01-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice Questions

20

- 1) _____ plays important role in gastric acid secretion.
 - a) Histamine
 - b) Serotonin
 - c) Atropine
 - d) Dobutamine
- 2) Histamine is biosynthesized from _____.
 - a) Proline
 - b) Valine
 - c) Histidine
 - d) Alanine
- 3) In SAR of H₁ antagonists 'X' requires to maintain _____ of receptor.
 - a) Affinity
 - b) Efficacy
 - c) Migration
 - d) Vitality
- 4) Select the MOA of Nitrogen mustards _____.
 - a) Alkylation of DNA
 - b) DNA cut
 - c) DNA fragmentation
 - d) DNA coiling
- 5) Which drug is referred for mitotic arrest?
 - a) Paclitaxel
 - b) Vincristine
 - c) Daunomycin
 - d) Rubicin
- 6) Nitro vasodilators does muscle relaxation by _____ of MLCK.
 - a) Amination
 - b) Phosphorylation
 - c) Ligation
 - d) Hydroxylation
- 7) _____ is provided in the form of chewable tablets in case of acute angina.
 - a) Nitroglycerin
 - b) Isosorbidedinitrate
 - c) Buclizine
 - d) None of these
- 8) Identify the following drug which belongs from 1, 4-dihydropyrimidines.
 - a) Nifedipine
 - b) Verapamil
 - c) Diltiazem
 - d) Digoxin
- 9) In SAR of ACE inhibitors _____ the N-ring increases the potency of drug.
 - a) Smaller
 - b) Larger
 - c) Equal
 - d) All of these
- 10) Nitroglycerin is generally synthesized by using _____ as a starting material.
 - a) Glycerin
 - b) Glycerin Chloride
 - c) Tri-glycerin
 - d) None of these
- 11) Select membrane depressant drug from the following
 - a) Quinidine
 - b) Testosterone
 - c) Hydrocortisone
 - d) Digitalis

- 12) _____ used for anti-arrhythmic purpose; which is generally belongs to epileptic category

a) Ouabaine	b) Lidocaine
c) Digoxin	d) Phenytoin
- 13) Select HMG-CoA reductase inhibitors from the following list _____.

a) Clofibrate	b) Cholesterol
c) Cholestyramine	d) Lovastatin
- 14) Clopidogrel used for_____ purpose.

a) Antihistaminic	b) Anti-coagulant
c) Antiallergic	d) Analgesic
- 15) Estrogen used for _____ purpose.

a) Birth control	b) Antibacterial
c) Protection of liver	d) Kidney failure
- 16) _____ called as anti-progesterone compound.

a) Mifeprestone	b) Androgen
c) Estrone	d) Estriole
- 17) _____ used for anti-allergic purpose.

a) Ketamine	b) Prednisone
c) Estrogen	d) Androgen
- 18) _____ is used as starting material in the synthesis of Tolbutamide.

a) Toluene	b) Thiazole
c) Indole	d) Hexane
- 19) _____ used as local anesthetic.

a) Acrabose	b) Prednisone
c) Metformin	d) Benzocaine
- 20) Identify glucosidase inhibitors from the following _____.

a) Pioglitazone	b) Nateglinide
c) Metformin	d) Acrabose

Q.2 Answer any seven of the following questions.

35

- Explain SAR and MOA of H_1 antagonist's.
- Explain any three classes of anti-anginal agents in detail.
- Explain drug used in the congestive failure.
- Explain SAR and MOA of antihyperlipidemics.
- Explain the corticosteroids.
- Explain SAR and MOA of antihypertensive agents.
- Explain Sex hormones along with specific structures. Add note on oral contraceptives.
- Outline synthesis of benzocaine and Tolbutamide.
- Give account of local anesthetics.

Q.3 Answer any two of the following questions.

20

- Classify antineoplastic agents. Explain in detail alkylating agent as effective anticancer agents.
- Explain in detail anti-arrhythmic and anticoagulants as effective CVS drugs.
- What is Angina? Explain any three classes in detail.

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- 12) The rate and extent of absorbed drug available at the site of action is referred as _____.
 - a) Bioequivalence
 - b) Bioavailability
 - c) Absorption
 - d) None of the above
- 13) Enteric coated tablet is disintegrated in _____.
 - a) Stomach
 - b) Mouth
 - c) Intestine
 - d) Liver
- 14) Lamination is _____.
 - a) Separation of tablet into two or more distinct layers
 - b) Partial and complete separation of the top and bottom crowns of a tablet
 - c) Process of sub coating of tablets
 - d) None of the above
- 15) The ability of compound to exist in more than one crystalline form is known as _____.
 - a) Polymorphism
 - b) Solvates
 - c) Crystallinity
 - d) Clathrates
- 16) Soft gelatin capsule is _____ piece capsule shell.
 - a) One
 - b) Two
 - c) Three
 - d) Four
- 17) Method used for finishing the capsules _____.
 - a) Pan polishing
 - b) Cloth dusting
 - c) Brushing
 - d) All of these
- 18) The rate of creaming is determined by _____.
 - a) Stoke's law
 - b) Dalton's law
 - c) Hallsher's law
 - d) Raoult's law
- 19) Vanishing cream is _____ type of emulsion.
 - a) Water in oil
 - b) Oil in water
 - c) Oil in water in oil
 - d) None of the above
- 20) Aerosols may be tested for _____.
 - a) Spray pattern
 - b) Weight variation
 - c) Reproducibility of the dosage form
 - d) All of the above

Q.2 Answer any seven of the following questions.

35

- a) Give BCS classification of drugs and its significance.
- b) Write the difference between flocculated and deflocculated suspension.
- c) What are Parenterals? Write advantages and disadvantages.
- d) Define Pre-formulation? Give the concept of Pre-formulation.
- e) What is sugar coating? Explain the steps involved in sugar coating.
- f) Explain the different stability indicating parameters of emulsion
- g) Explain the production of soft gelatin capsule shells.
- h) Write the methods of preparation, labelling and containers for eye drops.
- i) What are aerosols? Add a note on propellants.

Q.3 Answer any two of the following questions.

20

- a) Discuss In process and final product quality control tests for hard gelatine capsules.
- b) Describe wet granulation and dry granulation technique.
- c) Discuss different quality control tests of parenteral products.

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B. Pharmacy (Semester - V) (CBCS) Examination: Oct/Nov-2022
PHARMACOLOGY –II

Day & Date: Wednesday, 01-02-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory
 2) Figure to right indicate full marks.

Q.1 Multiple Choice Questions:

20

- 1) Verapamil belongs to _____
 a) Na⁺ channel blockers b) B blockers
 c) Calcium channel blockers d) Antiadrenergic agent
- 2) Plasma Half Life of Nitroglycerine is
 a) 2 min b) 40 min
 c) 4 - 6 hours d) 60 hours
- 3) Choose the most potent and most efficacious LDL cholesterol lowering HMG-CoA reductase inhibitor
 a) Lovastatin b) Simvastatin
 c) Pravastatin d) Atorvastatin
- 4) Which of the following potassium channel opener is useful in treatment of Angina?
 a) Trinitroglycerine b) Nicorandil
 c) Amlodipine d) Dipyridamole
- 5) _____ is a common adverse effect of ACE inhibitors in susceptible individuals.
 a) Cough b) Platelet Aggregation
 c) Disorientation d) Gynaecomastia
- 6) Indicate the drug belonging to antagonists of heparin _____
 a) Aspirin b) Dicumarol
 c) Dalteparin d) Protamine sulphate
- 7) Which of the following anticoagulant is used both in vivo as well as in vitro?
 a) Phenindione b) Warfarin
 c) Sodium oxalate d) Heparin
- 8) _____ is having high natriuretic efficacy.
 a) Mannitol b) Amiloride
 c) Spironolactone d) Furosemide
- 9) Which of the following is second generation sulfonyl urea derivative?
 a) Tolbutamide b) Acetazolamide
 c) Glibenclamide d) Tolazolam
- 10) Which of the following is a non-selective COX inhibitor?
 a) Aspirin b) Nimesulide
 c) Meloxicam d) Celecoxib
- 11) A thrombolytic capable of causing hypersensitivity reactions is
 a) Urokinase b) Streptokinase
 c) Alteplase d) Reteplase

- 12) The Lente insulin is a _____ combination of Ultralente and Semilente Insulin.
 - a) 1 : 1
 - b) 10 : 6
 - c) 5 : 2
 - d) 7 : 3
- 13) Vitamin K1 also called as _____.
 - a) Menaquinone
 - b) Phylloquinone
 - c) Both a and b
 - d) None of all
- 14) Indicate the drug belonging to antagonists of heparin _____.
 - a) Aspirin
 - b) Dicumarol
 - c) Protamine sulphate
 - d) Dalteparin
- 15) Following _____ is major complication in diabetes.
 - a) Nephropathy
 - b) Retinopathy
 - c) Only b
 - d) Both a & b
- 16) Which of the following is not Autocoid?
 - a) Adrenaline
 - b) 5 HT
 - c) Prostaglandin
 - d) Histamine
- 17) Mast cell degranulation and histamine release takes place by _____ interaction on their surface
 - a) IgE + Antigen
 - b) IgA + Antigen
 - c) IgM + Antigen
 - d) IgG + Antigen
- 18) Which of the following drug will inhibit peripheral conversion of T4 to T3?
 - a) Propylthiouracil
 - b) Carbimazole
 - c) Methimazole
 - d) All of the above
- 19) Another name/s for graded response bioassays is/are
 - a) Indirect Bioassay
 - b) Comparative bioassay
 - c) Both a & b
 - d) None of all
- 20) Generally the oral contraceptive pill contains the combination of
 - a) Estrogen and Progestin
 - b) Danazol and Testosterone
 - c) FSH and LH
 - d) Mifepristone and progestin

Q.2 Solve any seven:**35**

- 1) Classify diuretics with suitable examples and write about the uses of high ceiling diuretics.
- 2) Define and classify thyroid inhibitors; add a note on propylthiouracil.
- 3) What are Bioassays? Describe types and enlist methods of bioassay.
- 4) Define and classify NSAID's derivatives.
- 5) Write physiological role of insulin. Write an extensive account of insulin preparations.
- 6) Define Anti-rheumatic drugs. Discuss pharmacotherapy of rheumatic condition.
- 7) What are anticoagulants? Classify it and mention their uses.
- 8) Define and classify Non-steroidal anti-inflammatory agents.
- 9) Write an entire pharmacological account of digitalis including mechanism of action, adverse effects and uses.

Q.3 Solve any two:**20**

- 1) What are anti-hypertensives? Enlist most important anti-hypertensives in current clinical practice. Add a note on Beta blockers as anti-hypertensive.
- 2) Give detail pharmacology of Aspirin includes mode of action and adverse effects contra-indications, uses and limitations.
- 3) Write a note on oral contraceptives.

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Set **P**

B. Pharmacy (Semester - V) (CBCS) Examination: Oct/Nov-2022
PHARMACOGNOSY AND PHYTOCHEMISTRY – II

Day & Date: Tuesday, 21-02-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.**20**

- 1) Aqueous solution of quinidine in oxygenated acids produces _____ colour fluorescence.

a) Blue	b) Red
c) Yellow	d) Orange
- 2) Sweet taste of cinnamon is because of _____.

a) Cinnamic aldehyde	b) Mannitol
c) Glucose	d) Tannins
- 3) Podowart is the marketed product containing _____ as a major ingredient.

a) Papain	b) Himalayan May apple
c) Himalayan Yew	d) Himalayan gentian
- 4) _____ is an example of Iso thiocyanate glycoside.

a) Black mustard	b) Black pepper
c) Bitter almond	d) Wild cherry bark
- 5) _____ is mainly used as antioxidant agent.

a) Reserpine	b) Atropine
c) Podophyllin	d) Quercetin
- 6) Chemically, Opium latex is natural _____ form of papaveraceae.

a) Emulsion suspension	b) Emulsion
c) Suspension	d) Milky juice
- 7) When _____ is heated with potassium permanganate solution, then it evolves odour of benzaldehyde.

a) Sumatra benzoin	b) Siam benzoin
c) Chinese benzoin	d) European benzoin
- 8) Yellow colour of gentian root is because of _____.

a) Gentisin	b) Gentionose
c) Gentiobiose	d) Amarogentian
- 9) Taxol is mainly used as _____.

a) Antimalarial agent	b) Anticancer agent
c) Diuretic agent	d) Hypoglycaemic agent
- 10) Carotenoids are useful as _____.

a) Anti-inflammatory	b) Immunomodulatory
c) Cardio tonic	d) All of the above

- 11) Column chromatography is used _____.
 - a) To purify compounds
 - b) To separate the charged molecule
 - c) To separate complex constituent from the single compound
 - d) All of the above
- 12) Glycyrrhetic acid shows positive reaction with _____ test.
 - a) Shinoda
 - b) Liebermann – Burchard
 - c) Alkaline
 - d) Thalloquine
- 13) SDS-PAGE is used to separate _____.
 - a) Solutions
 - b) Mixtures
 - c) Charged Molecules
 - d) Atoms
- 14) _____ is the technique mainly used for the identification of functional groups of an isolated phytoconstituents.
 - a) UV spectroscopy
 - b) FTIR spectroscopy
 - c) NMR spectroscopy
 - d) Mass spectroscopy
- 15) The number petals found in the clove flower bud are _____.
 - a) Four
 - b) Six
 - c) Eight
 - d) Ten
- 16) _____ are amorphous mixture of essential oils, oxygenated products of terpenes and carboxylic acids found as exudation from the trunk of various trees.
 - a) Ethereal oils
 - b) Volatile oils
 - c) Resins
 - d) Aromatic oils
- 17) Therapeutic activity of glycoside class of drugs depends on _____ moiety and absorption depends on _____ moiety.
 - a) Aglycone, Glycone
 - b) Aglycone, Aglycone
 - c) Glycone, Glycone
 - d) Glycone, Aglycone
- 18) Select the crude drug used in the manufacturing of vanilline.
 - a) *Commiphora mukul*
 - b) *Commiphora weighti*
 - c) *Ferula foetida*
 - d) *Eugenia carryophyllus*
- 19) In which of the following phytoconstituents, heterocyclic rings are not present?
 - a) Quinine and quinidine
 - b) Strychnine and Brucine
 - c) Vincristine and reserpine
 - d) Ephedrine and colchicines
- 20) Identify the detecting agent used in the analysis of reserpine by TLC technique.
 - a) Dragendorffs reagent
 - b) Murexide reagent
 - c) Barfoed's reagent
 - d) Benedict's reagent

Q.2 Answer any seven of the following questions

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- a) Write a note on Acetate pathway.
- b) Write source, chemical constituents and uses of Devil's Dung and Artemisia.
- c) Write industrial and therapeutic application of volatile oils with suitable examples.
- d) Explain isolation and identification of Menthol.
- e) Give brief account on analysis of Rutin by TLC method.
- f) Explain industrial production and uses of Forskolin.
- g) Write applications of Chromatography.
- h) Write a short note on Periwinkle.
- i) Explain industrial production of Podophyllotoxin.

Q.3 Answer any two of the following questions.

- a)** Discuss pharmacognostic scheme of Senna-ki-Patti.
- b)** Describe Industrial Production and Estimation of Vincristine.
- c)** Write source, active constituent and uses of any one crude drug of the following classes:
 - 1) Belongs to Bioflavonoids class
 - 2) Shows positive reaction with Foam test
 - 3) Useful in rheumatism condition
 - 4) Used as a hair tonic
 - 5) Belongs to phenol volatile oil

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Day & Date: Monday, 06-02-2023
Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

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- 1) The D & C act was passed in the year _____.
a) 1940
b) 1942
c) 1945
d) None of these
- 2) Schedule _____ gives the standards for Ophthalmic Preparations.
a) F
b) FF
c) FFF
d) None of these
- 3) _____ is the chairman of Drugs technical advisory board.
a) President, AICTE
b) President, PCI
c) Director-general of health services
d) None of these
- 4) President, Pharmacy council of India is _____ member of Drugs technical advisory board.
a) an ex-officio
b) a nominated
c) an elected
d) None of these
- 5) Narcotics & psychotropic substances act was passed in the year _____.
a) 1980
b) 1985
c) 1990
d) None of these
- 6) _____ is a resin in crude or purified form obtained from the Cannabis plant.
a) manufactured drug
b) Ganja
c) Charas
d) None of these
- 7) Drugs & magic remedies (objectionable advertisements) act was passed in the year _____.
a) 1954
b) 1950
c) 1960
d) None of these
- 8) Alcohol of any strength which has been rendered unfit for human consumption is called as _____ per medicinal & toilet preparations act.
a) Ethanol
b) Denatured alcohol
c) Methanol
d) None of these
- 9) The prevention of cruelty to animals act was enacted in the year _____.
a) 1950
b) 1955
c) 1960
d) None of these

- 10) Treating animals cruelly is punishable with a fine not less than Rs _____ on first conviction.
a) 10
b) 20
c) 30
d) None of these
- 11) Medical termination of pregnancy act was passed in the year _____.
a) 1970
b) 1971
c) 1976
d) None of these
- 12) As per the Medical termination of pregnancy act, the pregnancy can be terminated in _____.
a) a government hospital
b) place approved for the purpose by the act
c) Both a & b
d) None of these
- 13) Code of pharmaceutical ethics has been framed by _____.
a) Pharmacy council of India
b) All India council for technical education
c) Both a & b
d) None of these
- 14) The chairman of "Drugs enquiry committee" was _____.
a) R N Dongra
b) R N Chopra
c) Both a & b
d) None of these
- 15) The pharmacy act was passed in the year _____.
a) 1938
b) 1958
c) 1948
d) None of these
- 16) _____ includes a Talisman, Mantra, Kavacha & any other charm claiming to possess miraculous powers.
a) Magic remedy
b) Drug
c) Advertisement
d) None of these
- 17) Elected members of state pharmacy council hold office for a period of _____ years
a) 3
b) 5
c) 7
d) None of these
- 18) _____ Drugs are prohibited to be imported as per the D & C act 1940.
a) Adulterated
b) Misbranded
c) Both a & b
d) None of these
- 19) DPCO 2013 has been notified under the Essential commodities Act _____.
a) 1955
b) 1960
c) 1965
d) None of these
- 20) Drugs controller of India is _____ member of Pharmacy council of India.
a) an elected
b) an ex-officio
c) a nominated
d) None of these

Q.2 Answer any seven of the following questions.**35**

- a) Under what circumstances pregnancies may be terminated as per the medical termination of pregnancy act?
- b) Define the terms "spurious drug" & "misbranded drug" as per the Drugs & Cosmetics act 1940.
- c) Write the constitution & functions of Drugs Technical Advisory Board.
- d) Explain the constitution & functions of Pharmacy Council of India.
- e) Discuss the requirements of "Bonded Laboratory" as per the Medicinal & toilet Preparations act.
- f) Explain "Pharmacist in relation to his job" & "Pharmacist in relation to medical profession".
- g) Define the terms "Animals" & "Cruelty" as per the Prevention of cruelty to animals act. Write the constitution of Institutional Animals Ethics committee.
- h) Write the offences & penalties under the Narcotic Drugs & psychotropic Substances act.
- i) Enumerate the objectives of Drug Price Control Order 2013. Define the terms "Active Pharmaceutical ingredient" & "Brand" as per the act.

Q.3 Answer any two of the following questions.**20**

- a) Explain the conditions that are to be fulfilled for obtaining a license to manufacture Schedule C & C1 Drugs as per the Drugs & Cosmetics act 1940.
- b) Under what circumstances can the name of a Pharmacist be removed from the Register of Pharmacist? Add a note on restoration of names to register.
- c) Highlight the qualifications powers & duties of Drugs Inspector as per the Drugs & Cosmetics act 1940.

B. Pharmacy (Sem-VI) (CBCS) Examination: Oct/Nov-2022
MEDICINAL CHEMISTRY - III

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicates full marks.

20

- 1) Identify narrow spectrum antibiotics from the following _____.
a) Nystatin b) Tetracycline
c) Amoxicillin d) Chloramphenicol
- 2) In presence of acid penicillin gets converted in to _____.
a) Penillic acid b) Valeric acid
c) Amino acid d) Ascorbic acid
- 3) _____ breaks beta -lactam ring.
a) Beta lactamase b) Hydrolases
c) Catalase d) Isomerase
- 4) Identify the prodrug from the following list.
a) Amoxicillin b) Azetidine
c) Bacampacillin d) Tetracycline
- 5) _____ contains epo-peroxide bridge in their structure.
a) Artemisinin b) Quinine
c) Quinidine d) Quinol
- 6) In vivo _____ gets converted in to cycloguanil.
a) Aztidine b) Isosorbide dinitrite
c) Buclizine d) Proguanil
- 7) In SAR of 4- aminoquinolines methyl group at R1 position _____ activity.
a) Increases b) Decreases
c) Equal d) All of these
- 8) _____ are major symptoms of malaria.
a) Anemia b) Fever
c) Chills d) All of these
- 9) _____ is used as starting material in the synthesis of chloroquine.
a) P-chloroaniline b) m-chloroaniline
c) o-chloroaniline d) All of these
- 10) Erythromycin isolated in 1952 by _____.
a) Alexander b) Kolbe
c) McGurry d) Ross
- 11) Partition coefficient belong to _____ parameter.
a) Hydrophilic b) Electronic
c) Hydrophobic d) Steric

- 12) In equation of Hansch et. al $\log p_0$ used for _____.
 - a) Low concentration
 - b) High concentration
 - c) Optimum concentration
 - d) Very low concentration
- 13) Select software of docking which is invented by IIT Delhi _____.
 - a) SANJIVANI
 - b) AOUTODOCK
 - c) CHEMDRAW
 - d) GOLD
- 14) Fungi are a kingdom of usually multicellular eukaryotic organisms that are _____ in nature.
 - a) Heterotrophs
 - b) Poly trophs
 - c) Megatrophs
 - d) None of these
- 15) Azols inhibit _____.
 - a) Ergo sterol synthesis
 - b) Mitochondria
 - c) ATP synthesis
 - d) Cytosol synthesis
- 16) In synthesis of metronidazole _____ used as starting material.
 - a) Ethylenediamine
 - b) Ethyl acetoacetate
 - c) Ethanol
 - d) Diethyl malonate
- 17) Select the starting material used in synthesis of Isoniazid.
 - a) 4-methyl pyridine
 - b) 1-methyl pyridine
 - c) 2-methyl pyridine
 - d) 5-methyl pyridine
- 18) Identify MOA of rifampicin.
 - a) DNA dependent RNA synthesis
 - b) peptide synthesis
 - c) peptidoglycan synthesis
 - d) DNA synthesis
- 19) Zidovudine shows action by inhibiting _____ enzyme.
 - a) Isomerase
 - b) Catalase
 - c) Peroxidase
 - d) Reverse transcriptase
- 20) _____ is generally used in UTI.
 - a) Tolanftate
 - b) Cycloserine
 - c) Norfloaxacin
 - d) Ampicillin

Q.2 Answer the following questions. (Any Seven)**35**

- a) Write SAR and MOA of Azols as effective antifungal agents.
- b) What are MOA and Uses of sulphonamides?
- c) Explain MOA and uses of anthelmintics with any two examples.
- d) Discuss the concept of prodrug.
- e) Classify antiviral agents. Explain any two drugs with structure.
- f) Explain SAR and MOA of quinolone antibiotics.
- g) What is drug design? Explain various approaches used in it.
- h) Outline synthesis of Acyclovir and chloramphenicol.
- i) Explain concept of combinatorial chemistry.

Q.3 Answer the following questions. (Any Two)**20**

- a) Explain life cycle of malarial parasite along with drug acting on it. Give SAR and MOA of 4- aminoquinolines.
- b) Classify antibiotics. Explain SAR and MOA of cephalosporins.
- c) Classify anti-TB agents. Give complete account of first line anti-TB drugs.

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No.**

Day & Date: Tuesday, 31-01-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

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- 1) Round worm infection is best treated with _____.
a) Metronidazole b) Albendazole
c) Pyrantelpamoate d) Niclosamide
- 2) Tick the antibiotic for cancer chemotherapy.
a) Cytarabine b) Doxorubicin
c) Gentamycin d) Etoposide
- 3) Select the Immunosuppressive agent _____.
a) Corticosteroids b) Cyclosporin
c) Tacrolimus d) All of above
- 4) Which of the following drug is used in morphine poisoning?
a) Naloxone b) Atropine
c) Neostigmine d) Flucanazole
- 5) Leprosy treatment included following drugs excepts _____.
a) Dapsone b) Rifampicin
c) Penicillin d) Clofazimine
- 6) All are Macrolide except _____.
a) Roxithromycin b) Streptomycin
c) Clarithromycin d) Azithromycin
- 7) The primary reason for the use of drug combination in the treatment of tuberculosis is _____.
a) Ensure patient compliance with the drug regimen
b) Enhance activity against metabolically inactive myobacteria
c) Delay or prevent the emergency of resistance
d) Provide prophylaxis against other bacterial infection
- 8) Omeprazole act by inhibiting _____.
a) Na+H+ATPase b) NA+K+ATPase
c) H+K+ATPase d) Calcium channels
- 9) Gray baby syndrome is caused by _____.
a) Chlorpromazine b) Chloramphenicol
c) Chlorpheniramine d) Gentamycin
- 10) _____ Inhibit the ergosterol biosynthesis.
a) Ketocanazole b) Amphotericin B
c) 5-Flucytosine d) Griseofluvin
- 11) Most important side effect of ethambutol is _____.
a) Hepatotoxicity b) Renal toxicity
c) Peripheral neuropathy d) Optic neuritis

- 12) _____ is the D2 blockers used to prevent vomiting.
 - a) Chlorpromazine
 - b) Benzodiazepines
 - c) Promethazine
 - d) Doxylamine
- 13) _____ Group of drugs is used for asthma treatment.
 - a) Methylxanthines
 - b) M-cholinoblocking agents
 - c) Beta2-stimulants
 - d) All of above
- 14) _____ Folate antagonist is a potent immunosuppressant.
 - a) Glucocorticoid
 - b) Methotrexate
 - c) Cyclophosphamide
 - d) Tacrolimus
- 15) Which one of the following is folate antagonist?
 - a) Etoposide
 - b) Azathioprine
 - c) Cytarabine
 - d) Methotrexate
- 16) Zidovudine shows its action by_____.
 - a) Inhibiting viral proteases
 - b) Inhibiting viral DNA synthesis
 - c) Inhibiting uncoating of the viral RNA
 - d) Inhibiting viral reverse transcriptase
- 17) Dapsone has the same mechanism of action as that of _____.
 - a) Mefloquine
 - b) Tetracycline
 - c) Erythromycin
 - d) Sulfonamides
- 18) Montelukast produces the following action(s) in bronchial asthma patients:
 - a) Bronchodilatation
 - b) Suppression of bronchial hyperreactivity
 - c) Stabilization of mast cells
 - d) Both a and b
- 19) Cotrimoxazole is fixed dose combination of _____.
 - a) Trimethoprim + Sulfamethoxazole
 - b) Sulfadiazine + Sulfamethoxazole
 - c) Trimethoprim + Sulfasalazine
 - d) Trimethoprim + Sulfacetamide
- 20) Select the antimicrobial drug which is used orally only for urinary tract infection or for bacterial diarrhoeas:
 - a) Nalidixic acid
 - b) Azithromycin
 - c) Bacampicillin
 - d) Pefloxacin

Q.2 Answer any seven of following questions

35

- a) Classify AntiTB drug. Write a note on DOTS Therapy.
- b) Classify antiemetic agent, write MOA of metaclopramide.
- c) Write a note on management of Barbiturate poisoning.
- d) Classify Immunosuppressive drug. Write MOA and Adverse effect of Cyclosporin
- e) Drugs used in treatment of malaria.
- f) What is Cough? Explain drugs used in cough.
- g) Write MOA and Adverse effect of Tetracycline.
- h) Explain in detail drugs for constipation and Diarrhoea.
- i) Write MOA and Adverse effect of Tetracycline and Aminoglycosides

Q.3 Answer any two of following questions**20**

- a)** Classify Antiulcer agent. Explain in detail mechanism of action of Proton pump inhibitors and ulcer protective agents.
- b)** Explain in detail Approaches to treatment, classification and mechanism of drugs used in Bronchial Asthma.
- c)** Classify anticancer drugs. Mention general principles of cancer chemotherapy. Give an account to newer approaches to treatment of cancer.

Seat No.	
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B. Pharmacy (Semester - VI) (CBCS) Examination: Oct/Nov-2022
HERBAL DRUG TECHNOLOGY

Day & Date: Monday, 20-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions **20**

- 1) Steroidal saponins are present in Liquorice are use full as _____ in cosmetics.
 - a) Astringent
 - b) Cleansing agent
 - c) Aromatic
 - d) Flavouring agent
- 2) _____ said Let food is your medicine and medicine is your food.
 - a) Galen
 - b) Charaka
 - c) Hippocrates
 - d) None
- 3) Lemon and Orange peels contain high concentration of _____.
 - a) Vitamin A
 - b) Vitamin C
 - c) Sugar
 - d) Hesperidine
- 4) _____ are cold blooded, their physical development is dependent on local temperature of the area.
 - a) Fish
 - b) Insects
 - c) Fungus
 - d) Bacteria
- 5) Opium latex is collected in _____.
 - a) morning
 - b) evening
 - c) night
 - d) after sun set
- 6) Garlic might _____ the pharmacological action of Warfarin.
 - a) Increase
 - b) Decrease
 - c) Moderate
 - d) No change
- 7) Natural colouring agents prepared from following herbs except _____.
 - a) menthe
 - b) mari gold
 - c) capsicum
 - d) saffron
- 8) Medicated syrups are prepared by _____.
 - a) Infusion
 - b) Decoction
 - c) Both A & B
 - d) None
- 9) Ash value of the crude drug shows _____, if the sample contains sand and silica impurities.
 - a) increased
 - b) decreased
 - c) no change
 - d) none
- 10) Phloroglucinol & HCl is used for detecting lignified tissues shows _____ colour.
 - a) Blue
 - b) Green
 - c) Yellow
 - d) Pink

- 11) Tridoshas are _____.
a) Vata
b) Pitta
c) Kapha
d) All of the above
- 12) Ayurvedic churna retains their potency for a period of _____ year.
a) One
b) Two
c) Three
d) More than 5 year
- 13) Spirulina consists of dried Biomass of _____.
a) Arthrospira Platensis
b) Arthrospira maxima
c) Blue-green algae
d) All of the above
- 14) General requirements necessary for the factory premises.
a) Water supply
b) Building
c) Waste disposal
d) All of the above
- 15) The standardization methods of medicinal plants and its extracts have importance in the field of _____.
a) Cosmetics
b) Nutraceuticals
c) Both a & b
d) None of the above
- 16) Ministry of AYUSH established CCRAS, which stands for _____.
a) Central Council for Research in Applied Sciences
b) Central Council for Research in Ayurveda and Siddha
c) Central Council for Research in Unani
d) None of the above
- 17) Betanin is the natural coloring agent present in _____.
a) *Bixa orellan*
b) *Curcus sativus*
c) *Beta vulgaris*
d) *Lawsonia intermis*
- 18) Henna leaves contains _____ compounds having colouring property.
a) Flavonoids
b) Steroids
c) Glycosides
d) Naphthoquinones
- 19) As per ICH guidelines subsection Q1B deals with _____.
a) Stability testing of new dosage forms
b) Photostability testing
c) Evaluation of stability data
d) None of the above
- 20) Glycerin is used in skin care cosmetic as _____.
a) Binder
b) Cleansing agent
c) Foaming agent
d) Moisturizing agent

Q.2 Answer any seven of the following questions.

35

- a) Write a short note on biodynamic agriculture.
- b) Explain herbal excipients utilized in cosmetic formulation.
- c) Explain ICH guidelines for the assessment of herbal drugs.
- d) Define Patent and Bio piracy.
- e) Write a note on present scope and future prospects of herbal drug industry.
- f) Explain which kind of interaction comes with following crude drugs.
 - 1) Kava kava
 - 2) Ginseng
- g) Write the importance of Amla and Ginger in herbal industry.
- h) Write a note on Indian Herbal Research Institutes.
- i) Write a note on GACP guidelines for the cultivation of herbs.

Q.3 Answer any two of the following questions.

20

- a)** Discuss Ayurvedic fermented Liquid preparation Asava and Arista along with evaluation methods.
- b)** What are Neutraceuticals? Write their classification and their importance in management of various diseases.
- c)** Describe different steps required for plant material processing to formulation development.

Seat No.	
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B. Pharmacy (Semester - VI) (CBCS) Examination: Oct/Nov-2022
BIOPHARMACEUTICS & PHARMACOKINETICS

Day & Date: Wednesday, 22-02-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) Rate and extent of absorption of unchanged drug from its dosage form is known as _____.
a) Distribution
b) Bioavailability
c) Elimination
d) Bioequivalence
- 2) Noyes and Whitney equation is used to describe _____.
a) Absorption
b) Dissolution
c) Distribution
d) Disintegration
- 3) Amorphous form of drugs are _____.
a) Less soluble than crystal form
b) More soluble than crystal form
c) Also called solvates
d) Practically insoluble
- 4) Passive diffusion is expressed by _____.
a) Ficks first law of diffusion
b) Ficks second law of diffusion
c) First order kinetics
d) Zero order kinetics
- 5) Micronised form of drug absorbed at fast because _____.
a) Surface area increased
b) Viscosity increased
c) Angle of distribution increased
d) None of the above
- 6) _____ is known as nonionic diffusion.
a) Passive diffusion
b) Ion pair transport
c) Pore transport
d) Endocytosis
- 7) Protein binding of drug helps to maintain _____ for absorption of drugs.
a) Non sink Condition
b) Sink Condition
c) Pka
d) None of the above
- 8) Which of the following is known as Tamoxifen binding site?
a) Site I
b) Site II
c) Site III
d) Site IV
- 9) Plasma protein binding _____ the volume of distribution of drug.
a) Increase
b) Decrease
c) No change
d) None of the above
- 10) Conjugation of drug includes the following except:
a) Glucuronidation
b) Sulfate formation
c) Hydrolysis
d) Methylation

- 11) As per BCS system, class I drugs come under _____.
 - a) High solubility high permeability
 - b) Low solubility high permeability
 - c) High solubility Low permeability
 - d) Low solubility low permeability
- 12) Which form of drug shows rapid dissolution rate?
 - a) Crystalline
 - b) Amorphous
 - c) Hydrate
 - d) None of the above
- 13) Ex- vivo models refer to _____.
 - a) In the body
 - b) In the computer
 - c) Outside the body
 - d) None of the above
- 14) The area under the serum concentration time curve of the drug represents _____.
 - a) The biological half-life of the drug
 - b) The amount of drug in the original dosage form
 - c) The amount of drug absorbed
 - d) The amount of drug excreted in the urine
- 15) The ability of liver to excrete drug in the bile is expressed by _____.
 - a) Hepatic Clearance
 - b) Biliary clearance
 - c) Non - renal Clearance
 - d) Renal Clearance
- 16) Non-linear pharmacokinetics is also known as _____.
 - a) Dose dependent
 - b) Enzyme capacity limited
 - c) Saturation Pharmacokinetics
 - d) All of the above
- 17) _____ is defined as volume of blood or plasma from drug is removed in unit time.
 - a) Half- life
 - b) Clearance
 - c) Volume of distribution
 - d) Biotransformation Tamoxifen
- 18) Creatinine clearance is used as measurement for _____.
 - a) Glomerular filtration rate
 - b) Renal excretion rate
 - c) drug metabolism rate
 - d) Passive renal excretion
- 19) Low molecular weight of drug have _____.
 - a) Low Vd
 - b) High Vd
 - c) No Vd
 - d) None of the above
- 20) Primary binding site for albumin is _____ binding site.
 - a) Warfarin
 - b) Diazepam
 - c) Digitoxin
 - d) Tamoxifen

Q.2 Answer any seven of the following questions.

35

- a) What is pH partition hypothesis? Give its limitation.
- b) Explain the significance of polymorphism in drug absorption with suitable example.
- c) Write in detail about volume of distribution.
- d) Explain in detail biotransformation of drug.
- e) Enlist theories of drug dissolution. Explain any one.
- f) Write short note on plasma concentration time curve.
- g) Write a note on types of compartment models.
- h) What are the sources of non-linearity in kinetics of drugs?
- i) Explain in detail measurement of bioavailability.

Q.3 Answer any two of the following questions.

- a)** Explain mechanism involved in absorption of drugs from GI tract.
- b)** Define dissolution. Discuss various factors affecting dissolution of drug.
- c)** Discuss in detail methods of enhancement of bioavailability.

**Seat
No.**

Day & Date: Tuesday, 07-02-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- 1) UPT kit is useful to confirm _____.
a) Diabetes
b) Pregnancy
c) Blood pressure
d) Hepatitis A
- 2) _____ reagent is used to confirm RNA.
a) Bile
b) DPA
c) FDA
d) Safranin
- 3) _____ discovered RNA in 1909.
a) Phoebus Levene
b) Rous
c) Guarine
d) Weismann
- 4) Identify vector mediated gene transfer technique _____.
a) Electroporation
b) Liposome mediated Gene transfer
c) PEG mediated Gene transfer
d) Agrobacterium mediated Gene transfer
- 5) Sparger is used in fermentation for addition/supply of _____.
a) Antifoaming agent
b) Sterile air
c) Antimicrobial agents
d) Sterile medium
- 6) *E. coli* DNA ligase enzyme has an ability to join _____ of DNA fragments.
a) Blunt ends
b) Sticky ends
c) Coding ends
d) Genetic ends
- 7) Alexander Fleming discovered penicillin in _____.
a) 1919
b) 1928
c) 1939
d) 1949
- 8) _____ enzyme is isolated from *Thermits aquaticus*.
a) *Taq polymerase*
b) *Taq ligase*
c) *Taq kinase*
d) *Taq nuclease*
- 9) Most suitable pH required for the commercial production of streptomycin is _____.
a) 7 to 8
b) 3 to 4
c) 9 to 10
d) 5 to 6
- 10) _____ requires Mg^{++} for cleavage of DNA molecules.
a) Type I restriction endonuclease
b) Type II restriction endonuclease
c) Type III restriction endonuclease
d) Type IV restriction endonuclease

- 11) Identify the device used to control constant water flow in fermentation process.
 - a) Tachometer
 - b) Flow Meter
 - c) Rota Meter
 - d) Speedometer
- 12) Identify the substrates used for growth of anchorage dependent animal cells.
 - a) Glass
 - b) Plastic
 - c) Metal
 - d) All of these
- 13) _____ is most commonly used fusogen in conjunction with alkaline pH & high calcium concentrations
 - a) PEG
 - b) NaNO_3
 - c) PVA
 - d) DMSO
- 14) The most important discovery that lead to the development of rDNA technology was _____.
 - a) Discovery of Watson & crick helix DNA model
 - b) Discovery of restriction endonuclease
 - c) Discovery of ligase
 - d) Discovery of tissue culture cloning
- 15) _____ is most superior cryoprotectant used in cryopreservation.
 - a) PEG
 - b) NaNO_3
 - c) PVA
 - d) DMSO
- 16) Most suitable pH required for the commercial production of penicillin is _____.
 - a) 6.2 to 6.8
 - b) 3.2 to 3.8
 - c) 10.2 to 10.8
 - d) 4.2 to 4.8
- 17) Fibroblast interferon is also called as _____.
 - a) Immune interferon
 - b) Beta interferon
 - c) Leucocyte interferon
 - d) Alpha interferon
- 18) Merk's media contains glucose, soybean extract and sodium chloride in proportion of _____.
 - a) 10:10:20
 - b) 10:20:10
 - c) 20:10:10
 - d) 10:20:20
- 19) Identify an enzyme obtained from microbial source _____.
 - a) Glucose oxidase
 - b) Streptokinase
 - c) Urokinase
 - d) Both a & b
- 20) Southern blotting technique is used for specific identification of _____.
 - a) RNA
 - b) Proteins
 - c) DNA
 - d) Lipids

Q.2 Answer any seven of the following questions

35

- a) Write a note on cosmid as vector.
- b) Define down stream processing. Why is it to be done?
- c) Add a note on ELISA
- d) Explain historical background of biotechnology.
- e) Discuss the methods of enzyme immobilization and applications.
- f) Write the application of genetic engineering in medicine.
- g) Write about processing and storage of whole human blood.
- h) Discuss the southern blotting technique.
- i) Explain construction of conventional fermenter with neat labeled diagram.

Q.3 Answer any two of the following questions.

- a)** Explain production of glutamic acid and griseofulvin.
- b)** Describe the concept of Polymerase Chain Reaction.
- c)** Discuss production of monoclonal antibodies by hybridoma technology.

Seat No.	
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B. Pharmacy (Semester - VI) (CBCS) Examination: Oct/Nov-2022
QUALITY ASSURANCE

Day & Date: Thursday, 09-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions

20

- 1) What is the full form of TQM?
 - a) True quality machining
 - b) Total quality management
 - c) True quantitative machining
 - d) Total queue management
- 2) The objective of ISO-9000 family of Quality management is _____.
 - a) Environmental issues
 - b) Employee satisfaction
 - c) Skill enhancement
 - d) Customer satisfaction
- 3) Which of the following is correct for TQM?
 - a) Quality strategy in TQM emanates from top
 - b) TQM is a static process
 - c) It is a management approach to short-term success through customer
 - d) It is used to improve processes not products
- 4) Which of the following option is correct regarding QA and QC?
 - a) QA is an integral part of QC
 - b) QC is an integral part of QA
 - c) QA and QC are independent to each other
 - d) QC may or may not depend on QA
- 5) What is quality control?
 - a) Process of recognition of entire manufacturing process
 - b) Concerned with the integration of all the efforts in organization
 - c) Detection of defects in a product
 - d) Minimization of material level
- 6) When setting up packaging operations, particular attention should be given to the following _____.
 - a) Risk of Cross contamination
 - b) Mix-Ups
 - c) Substitutions
 - d) All of these
- 7) What does NABL stand for?
 - a) National Accreditation Board Limited
 - b) National Accreditation Board for Laboratories
 - c) National Accreditation Board for Testing and Calibration Laboratories
 - d) National Accreditation Board for Law
- 8) A basic requirement for Good Manufacturing Practice is:
 - a) Records should be maintained
 - b) Operators are trained to carry out procedures correctly
 - c) SOP s should be followed
 - d) All of these

- 9) Significant amendments to the manufacturing process:
 - a) should be avoided
 - b) should be validated
 - c) Should be informed to manager
 - d) SOP preparation
- 10) Q _____ guidelines are foundation of QBD.
 - a) Q 8,9 & 10
 - b) Q 1,2 & 4
 - c) Q 3A, 3B, 3C & 3D
 - d) Q13, 14 &15
- 11) NABL accreditation will be valid for _____.
 - a) 1
 - b) 2
 - c) 3
 - d) 5
- 12) The guidelines that describe the stability testing of drug substances and drug products are?
 - a) ICH Q2
 - b) ICH Q1
 - c) ICH Q8
 - d) ICH Q9
- 13) How many batches should be considered for stress testing under basic conditions testing as per ICH?
 - a) At least 3
 - b) At least 2
 - c) At least 1
 - d) At least 5
- 14) The lowest amount of analyte in a sample which can be detected and quantified is called as?
 - a) Limit of Detection
 - b) Accuracy
 - c) Limit of Quantitation
 - d) Specificity
- 15) The degree of agreement amongst individual results is termed as?
 - a) Specificity
 - b) Precision
 - c) Accuracy
 - d) Sensitivity
- 16) Calibration requirements are performed during _____.
 - a) Installation qualification
 - b) Operational qualification
 - c) Performance qualification
 - d) All of the above
- 17) QTPP stands for _____.
 - a) Quality Target Product Profile
 - b) Quality Testing Product Packaging
 - c) Quality Target Planning Product
 - d) None of the above
- 18) In Quality by Design process CMA and CPP stands for _____.
 - a) Critical Material Attributes and Critical Process Performance
 - b) Critical Manufacturing Attributes and Critical Packaging Parameters
 - c) Critical Material Attributes and Critical Process Parameters
 - d) Critical Matching Attributes and Critical Planning Parameters
- 19) P-D-C-A stands for _____.
 - a) Proceed-Do-check-Act
 - b) Plan-Do-correct-Act
 - c) Plan-Do-check-Act
 - d) Proceed-Do-correct-Act
- 20) Physical dimension of equipment and accessories- comes under which qualification?
 - a) Design qualification (DQ)
 - b) Installation qualification (IQ)
 - c) Operational qualification
 - d) Performance qualification (PQ)

Q.2 Answer any seven of the following questions**35**

- a) Define Quality Assurance and Quality Control. Distinguish between QA and QC.
- b) Define Drug Stability. Write objectives and scope of stability testing.
- c) Give ten principles of Good Manufacturing Practices.
- d) Write significance of Organization and Personnel as per GMP.
- e) Explain in detail key parameters of Good Warehousing Practices.
- f) Define ISO. Explain the principles of ISO.
- g) Discuss scope and benefits of NABL.
- h) Define QbD. Explain the terms- Critical Material Attributes and Critical Process Parameters.
- i) Discuss protocol for conduct of a nonclinical laboratory study.

Q.3 Answer any two of the following questions.**20**

- a) Define Validation. Write in detail about Analytical Method Validation.
- b) Explain Deming's 14 Points Guidelines for the management for attainment of total quality.
- c) Describe in detail any five quality control tests for glass container.

Seat No.	
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Set **P**

B. Pharmacy (Semester - VII) (CBCS) Examination: Oct/Nov-2022
INSTRUMENTAL METHODS OF ANALYSIS

Day & Date: Saturday, 28-01-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicates full marks.

Q.1 Choose the correct alternatives from the options and rewrite the sentence. 20

- 1) Which transition requires highest energy?
 - a) $n \rightarrow \sigma^*$
 - b) $\sigma \rightarrow \sigma^*$
 - c) $n \rightarrow \pi^*$
 - d) $\pi \rightarrow \pi^*$
- 2) Turbidimetry is concerned with measurement of _____ light by suspended particles in solution.
 - a) Absorbed
 - b) Scattered
 - c) Transmitted
 - d) All of the above
- 3) The number of wavelength units passing through unit distance is called as _____.
 - a) Wave number
 - b) Frequency
 - c) Velocity
 - d) None of the above
- 4) _____ is out of plane deformation vibration.
 - a) Stretching
 - b) Scissoring
 - c) Rocking
 - d) Wagging
- 5) Carbon dioxide has _____ modes of vibration.
 - a) 4
 - b) 2
 - c) 3
 - d) 1
- 6) Shift of absorption maxima towards longer wavelength is called as _____.
 - a) Hypsochromic shift
 - b) Bathochromic shift
 - c) Hyperchromic shift
 - d) Hypochromic shift
- 7) Which sentence is false about Nephelometry?
 - a) is concerned with the measurement of the intensity of the transmitted light.
 - b) is concerned with the measurement of the intensity of the scattered light.
 - c) Intensity of scattered light is directly proportional to the concentration of the suspended particle.
 - d) The intensity of the scattered light is usually measured at 90° to the incident light.
- 8) _____ technique where separation of sample mixture was carried out by continuous addition of mobile phase.
 - a) Elution
 - b) Frontal analysis
 - c) Displacement analysis
 - d) All of the above
- 9) The most commonly used pathlength in most UV-VIS spectrophotometer is _____.
 - a) 10 cm
 - b) 10 nm
 - c) 1 mm
 - d) 10 mm

- 10) Volume of M.P. required to elute 50% of the compound from the column is defined as _____.
a) Adjusted retention volume b) Retention time
c) Retention volume d) Adjusted retention time
- 11) _____ of Van Demeter equation deals with different paths travelled by molecules of particular solute during their passage through the column.
a) Coefficient B b) Coefficient A
c) Coefficient C d) Coefficient D
- 12) Temperature produced in flame photometer by Acetylene and oxygen mixture is _____.
a) 2700 b) 2900
c) 3100 d) 3500
- 13) The material used for construction of cathode of Hollow cathode lamp is _____.
a) Tungsten b) Quartz
c) Element to be investigated d) Aluminium
- 14) The chromatographic method of separating biochemical mixture of compounds, based on highly specific biological interactions is referred to as _____.
a) thin layer chromatography b) ion-exchange chromatography
c) affinity chromatography d) gel permeation chromatography
- 15) Spontaneous emission of previously absorbed radiation by a molecule is called as _____.
a) Phosphorescence b) Fluorescence
c) Flame emission d) None of the above
- 16) Which of the following statements is true about migration of biomolecules?
a) The rate of migration is directly proportional to the resistance of medium.
b) Rate of migration is directly proportional to current.
c) Low voltage is used for separation of high mass molecules.
d) Rate of migration is inversely proportional to current.
- 17) The speed of migration of ions in electric field depends upon: _____.
a) Shape and size of molecule
b) Magnitude of charge and shape of molecule
c) Magnitude of charge shape and mass of molecule
d) Magnitude of charge and mass of molecule
- 18) _____ is used as column packing material for guard column in HPLC.
a) Non porous b) 50% Porous particle
c) Pellicular particle d) All of the above
- 19) Which of the following gases is unsuitable for use as a GC carrier gas?
a) Nitrogen b) Helium
c) Oxygen d) All of the above
- 20) Which of the following is not a gel filtration media used in gel filtration?
a) Silica gel b) Sephadex
c) Agarose gel d) Polyacrylamide gels

Q.2 Answer the following questions. (Any Seven)**35**

- a) Enlist and write a note on types of electronic transition in an organic molecule.
- b) Give construction and working of Premix burner and Total consumption burner.
- c) Explain in detail deviations in Beer's law.
- d) Give principle and applications of Affinity Chromatography.
- e) Write a note on any two pumps used in HPLC.
- f) Give principle and applications of Turbidimetry.
- g) Write a note on detection and visualisation methods used in TLC.
- h) Discuss practical requirements and methodology of Ion Exchange Chromatography.
- i) Why Nitrogen is used as carrier gas in Gas Chromatography?

Q.3 Answer any two of the following questions**20**

- a) Define Chromatography. Give types of Chromatography. Explain in detail any four development techniques of paper chromatography.
- b) Discuss in detail factors influencing fluorescence intensity.
- c) Give types of molecular vibrations. Explain factors affecting Vibrational frequencies.

Seat No.	
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Set **P**

B. Pharmacy (Semester - VII) (CBCS) Examination: Oct/Nov-2022
INDUSTRIAL PHARMACY - II

Day & Date: Tuesday, 31-01-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple choice questions**20**

- 1) Quality management system deals with _____.
 - a) Quality for their products and services
 - b) Safety for their products and services
 - c) Quality and safety for their products
 - d) Quality and safety for their products and services
- 2) Key components of TQM are _____.
 - a) Consumer/Customer focus
 - b) Continuous improvement
 - c) Involvement of employee
 - d) All of these
- 3) Six sigma concept includes _____.
 - a) Define, Measure, Analyze, Improve and Control
 - b) Design, Measure, Analyze, Improve and Control
 - c) Define, Manage, Analyze, Improve and Control
 - d) All of these
- 4) The basic principle of ISO 9000 is _____.
 - a) Customer focus and Engagement of people
 - b) Relationship management and Leadership
 - c) Evidence based decision making and Continuous improvement
 - d) All of these
- 5) MoU stands for _____.
 - a) Memorandum of Ubiquitous
 - b) Memorandum of Understanding
 - c) Memorandum of Unpredictable
 - d) Memorandum of Unprofitable
- 6) What is the primary focus of Phase 3 Clinical testing?
 - a) How to manage costs
 - b) The collection and analysis of highly specific efficacy end-point data
 - c) The optimal range of effective dosage.
 - d) The analysis of data results from the small-subset target population
- 7) The definition of Quality Risk Management (QRM) has been mentioned in ICH guideline _____.

a) Q7	b) Q8
c) Q9	d) Q10
- 8) Thalidomide tragedy was detected in the year _____.

a) 1861	b) 1961
c) 1967	d) 1991

- 9) Which of the following is not a scale-up process?
a) Laboratory to pilot-scale
b) Pilot-scale to industrial-scale
c) Industrial to pilot-scale
d) Laboratory to industrial-scale
- 10) The basic requirement of Technology Transfer is _____.
a) Sending Unit (SU)
b) Receiving Unit (RU)
c) Both (a) and (b)
d) None of these
- 11) APCTT was established in _____.
a) Pune
b) Delhi
c) Geneva
d) Bangalore
- 12) CDSCO head office is located in _____.
a) Mumbai
b) Kolkata
c) New Delhi
d) Chennai
- 13) Which of the following is an International regulatory authority for drug regulation?
a) CDSCO
b) US-FDA
c) WHO
d) EMA
- 14) There are _____ Phases of clinical trials.
a) 1
b) 2
c) 3
d) 4
- 15) Application for permission to import new drug _____.
a) 122A
b) 122B
c) 123B
d) 122A & 122B
- 16) Form 11 licence is issued for _____.
a) Export of drugs for examination, test or analysis
b) Manufacture of drugs for the purpose of examination, test or analysis
c) Import of drugs for examination, test or analysis.
d) Distribution of drugs for examination, test or analysis
- 17) RDTL is _____.
a) Reserved Drugs Testing Laboratory
b) Regional Drugs Testing Laboratory
c) Random Drugs Testing Laboratory
d) None of the above
- 18) R A Professional works in the following areas _____.
a) Pharmaceuticals
b) Medical devices
c) Both a & b
d) None
- 19) The discipline of any organization involved in transferring of designated process or method is called as _____.
a) SU
b) RU
c) QRM
d) None
- 20) On which two criteria does the FDA classify NDAs?
a) Novelty of the active ingredient and time to market
b) Balance between safety and effectiveness
c) Novelty of the active ingredient and clinical improvement
d) Clinical improvement and effectiveness of product

- Q.2 Answer any seven of the following questions. 35**
- a) Explain about Technology Transfer protocol.
 - b) Write a note SUPAC Guidelines.
 - c) Write the functions of State Licensing authorities.
 - d) Explain in detail Quality Risk Management.
 - e) Describe in detail the process of Investigational New Drug Application.
 - f) Define ISO 14000. Write a note on ISO 14000 standards.
 - g) Define GLP. Write the principles and benefits of GLP.
 - h) Write a note on different phases of Clinical trials.
 - i) Describe principle and procedure involved in BE studies.
- Q.3 Answer any two of the following questions. 20**
- a) Explain the concepts of Total Quality Management and Quality by Design (QbD).
 - b) Explain the CDSCO and COPP.
 - c) What is a pilot plant? Explain the factors to be considered in the organization of a pharmaceutical pilot plant.

**Seat
No.**

Day & Date: Monday, 20-02-2023
Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- 1) Hospital is major social organization that offers considerable advantages to _____.
a) Society
b) Patient
c) Both a & b
d) None of these
- 2) The medication history is the part of the patient interview that provides the opportunity to utilize his or her expertise by precisely collecting each component _____.
a) Nurses
b) Pharmacist
c) Physicians
d) All
- 3) PTC set policy for the automatic discontinuation of all medication prescription after _____ hours for sedative drugs.
a) 12
b) 18
c) 24
d) 48
- 4) In India, under public health system medical colleges & advanced medical research institutes provides _____.
a) Primary care
b) Secondary care
c) Tertiary care
d) All
- 5) The licenses for restricted sale of drugs those specified in schedule C & C1 but not in schedule X are issued in form _____.
a) 20
b) 20F
c) 20A
d) 21A
- 6) Ambulatory patient are _____.
a) Required emergency treatment
b) Required to admit in ward for treatment
c) Required to go home after taking treatment
d) Both a and b
- 7) A Hospital formulary usually consist of listing therapeutic agents by their _____.
a) Brand name
b) Chemical Name
c) Generic names
d) All
- 8) Combination method for codification of various items of drug is a _____.
a) Combination of mnemonic & alphabetical method
b) Combination of mnemonic & numerical method
c) Combination of numerical & letter code method
d) Combination of numerical & alphabetical method

- 9) The function of hospital pharmacy were controlled by hospital?
 - a) Pharmacist
 - b) Physicians
 - c) Management
 - d) All
- 10) _____ example of external training programs.
 - a) Mock Drills
 - b) Induction
 - c) On job training
 - d) None
- 11) The ideal drug store should have _____ entrances.
 - a) One
 - b) Two
 - c) Three
 - d) Four
- 12) Community pharmacy is often referred _____.
 - a) Retail pharmacy
 - b) Retail drug outlet
 - c) Both a & b
 - d) None of these
- 13) Unit dose drug distribution system have significantly reduced the occurrence of _____.
 - a) Side effect
 - b) Medication errors
 - c) ADR's
 - d) None of these
- 14) ADR's may be due to inherited absence or deficiency of certain specific _____.
 - a) Protein
 - b) Enzymes
 - c) Carbohydrates
 - d) Amino acids
- 15) Presence of ketone bodies in urine indicates _____.
 - a) Kidney dysfunction
 - b) Nephrosis
 - c) Hypoglycaemia
 - d) Mushroom poisoning
- 16) The _____ is the heart of the patient counselling session.
 - a) Preparing for the session
 - b) counselling content
 - c) opening the session
 - d) closing the session
- 17) How many types of sources of drug information _____?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
- 18) Short term finance is raised for a period of less than _____ or more.
 - a) 1 to 3 month
 - b) 2 to 5 years
 - c) 7 to 9 years
 - d) 10 years
- 19) In which year Thalidomide tragedy was occurred?
 - a) 1965
 - b) 1961
 - c) 1967
 - d) 1970
- 20) This new responsibility of pharmacist is to actively ensure that prescribed drug therapy is _____.
 - a) Effective
 - b) Safe
 - c) Economical
 - d) All

Q.2 Answer any seven of the following questions.

35

- a) Discuss in details the drug distribution system to inpatient department.
- b) Write the composition, organization and function of pharmacy and therapeutic committee.
- c) Explain the role of healthcare provider in improvement of medication adherence.
- d) Explain in short pharmacokinetic mechanisms of drug interaction along with examples.
- e) Discuss in detail the role of pharmacist in community health education.

- f)** Define Budget? Write its objective, advantages and classification.
- g)** Explain the steps for effective Patient counselling.
- h)** Write importance of laboratory testing and explain biochemical tests used for assessment of kidney function.
- i)** Explain factors affecting the therapeutic drug monitoring.

Q.3 Answer any two of the following questions.

20

- a)** Define Hospital? Discuss various types of classification of hospital and write organizational structure of hospital.
- b)** Explain training programs in hospital and role of pharmacist in community health education.
- c)** What is clinical Pharmacy? Write requirements, duties and functions of clinical pharmacist.

Seat
No.Set **P**

B. Pharmacy (Semester - VII) (CBCS) Examination: Oct/Nov-2022
NOVEL DRUG DELIVERY SYSTEM

Day & Date: Wednesday, 22-02-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.**20**

- 1) Soluble erodible polymer membranes follow _____ principle of drug release.
 - a) dissolution
 - b) osmosis
 - c) diffusion
 - d) diffusion and dissolution
- 2) For describing drug release kinetics from a tablet where there is change in surface area and diameter, which model fitting is suitable?
 - a) Zero order
 - b) First order
 - c) Higuchi model
 - d) Hixon-crowel model
- 3) Soft, flexible and hydrophilic contact lenses contain _____.
 - a) Polymethyl methacrylate
 - b) Hydroxyethyl methacrylate
 - c) Silicone derivatives
 - d) All of above
- 4) Liposomes are known to be susceptible for _____.
 - a) Oxidation
 - b) Acetylation
 - c) Reduction
 - d) Isomerization
- 5) Which from the following factor does not affect Osmotic systems?
 - a) Osmotic pressure gradient
 - b) Delivery orifice
 - c) Membrane permeability, surface area thickness
 - d) Change in pH of environment
- 6) In-situ gelling system is formed by _____ mechanism.
 - a) Change in pH
 - b) Change in glucose level
 - c) Change in electric field
 - d) Change in ion concentration
- 7) Which of the following is a thermosetting polymer?
 - a) polystyrene
 - b) polyolefins
 - c) nylons
 - d) phenolic resins
- 8) What are the characteristics of continuous release systems?
 - a) Release the drug along the entire length of GIT
 - b) Prolonged the residence in GIT and release
 - c) Release only at a specific drug
 - d) Release as soon as comes in contact to the saliva
- 9) Which of the following is not the right method of controlling the drug release?
 - a) Increasing the viscosity
 - b) By forming complexes with macromolecules
 - c) Increasing the pH to make it highly basic
 - d) Reducing the solubility rate of parent drug

- 10)** Which of the following drugs cannot be given as transdermal administration?
- a) Drugs with very short half-lives
 - b) Drugs with narrow therapeutic indices
 - c) Easy removal and termination
 - d) Drugs against peptic ulcer
- 11)** What are the characteristics of colonic release systems?
- a) Release the drug along entire GI length
 - b) Prolonged the GI residence and release
 - c) Usage of polymers that dissolves only in the alkaline pH of colon
 - d) Use of enteric coating
- 12)** The polymer used in the Lacrisert is _____.
- a) Hydroxyethyl cellulose
 - b) Hydroxymethyl cellulose
 - c) Methyl cellulose
 - d) Hydroxypropyl cellulose
- 13)** Microspheres are prepared by coacervation by using _____ method.
- a) Non-solvent
 - b) Trituration
 - c) pH modification
 - d) pressure
- 14)** Use of monoclonal antibodies for drug delivery to tumors is called as _____.
- a) active targeting
 - b) passive targeting
 - c) triggered drug targeting
 - d) vector targeting
- 15)** Which amongst the following are the smallest liposomes?
- a) Oligolamellar vesicles
 - b) Multilamellar vesicles
 - c) Large unilamellar vesicles
 - d) Multivesicular vesicles
- 16)** Mucosal drug delivery system delivered to the gums is termed as _____.
- a) sublingual delivery
 - b) buccal delivery
 - c) nasal delivery
 - d) gingival delivery
- 17)** Tablets that are placed under the skin are called as _____.
- a) Enteric-coated tablets
 - b) Film-coated tablets
 - c) Implants
 - d) Sublingual tablets
- 18)** _____ permeation enhancer is used in mucosal drug delivery system.
- a) Methyl paraben
 - b) Calcium chloride
 - c) Sodium taurocholate
 - d) Sodium chloride
- 19)** Which component is not included in the combination of SEDDS formulation?
- a) Oil
 - b) Drug
 - c) Lipid
 - d) Wax
- 20)** What are the characteristics of matrix diffusion-controlled release systems?
- a) Release the drug along entire GI length
 - b) Drug disperse in an insoluble matrix of rigid hydrophobic materials
 - c) Release only at a specific drug
 - d) Employ waxes to control the rate of dissolution

Q.2 Answer any seven of the following questions.

- a) Enlist the problems associated with colonic drug delivery systems.
- b) What is the rational of using low density materials in gastroretentive systems?
- c) Describe the types and methods of preparation of matrix systems.
- d) Explain about micro-balloons as gastroadhesive drug delivery system
- e) Explain the drug selection criteria in oral CR formulations.
- f) Discuss different strategies to design transdermal drug delivery system giving suitable examples.
- g) Enlist different viscolizing agents used in ophthalmic preparations with their effective concentration range.
- h) Describe the design of intra-uterine devices by giving suitable examples.
- i) Describe implants as controlled drug delivery system.

Q.3 Answer any two of the following questions.

- a) Describe in detail the encapsulation based dissolution control drug delivery systems.
- b) Develop a formula for bioadhesive drug delivery. Give logical reasoning for selection of excipients in the formula.
- c) Describe the dissolution test for extended release dosage forms as per U.S.P.

Seat No.	
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Set **P**

B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov-2022
BIostatistics AND RESEARCH METHODOLOGY

Day & Date: Friday, 27-01-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions**20**

- 1) Mode is____
 - a) Most frequent value
 - b) Least frequent value
 - c) Middle most value
 - d) none
- 2) Which of the following is a measure of variation?
 - a) standard deviation
 - b) midrange
 - c) mode
 - d) median
- 3) Standard deviation is____
 - a) The square root of variance
 - b) Measured using the unit of the variable
 - c) Measured using the squared unit of the variable
 - d) Values generally comparable with the average value
- 4) The median of a series of numerical values is
 - a) Equal to the average
 - b) A graph or chart
 - c) A number
 - d) A frequency table
- 5) The Student's t test is____
 - a) a parametric test
 - b) a nonparametric test
 - c) a test for comparing averages
 - d) a test for comparing variances
- 6) Which of the following is not a measure of central tendency?
 - a) Mode
 - b) Variability
 - c) Median
 - d) Mean
- 7) The coefficient of skewness is always zero for____ distribution.
 - a) Symmetrical
 - b) Skewed
 - c) Median
 - d) None
- 8) SPSS stands for____.
 - a) Simple perfect squared square
 - b) Statistical product and service solutions
 - c) Statistical package for social science
 - d) Software package for statistical science
- 9) _____is the classical form of research?
 - a) Experiment
 - b) Case study
 - c) Grounded theory
 - d) Narrative inquiry
- 10) Ungrouped frequency distribution are used if variable are____
 - a) Continuous
 - b) Discrete
 - c) Both a and b
 - d) None of the above

- 11) Line frequency graph is used to depict ____ data.
a) Continuous b) Discrete
c) Both a and b d) None of the above
- 12) What are the measures of the dispersion?
a) Range b) Quartile deviation
c) Mean deviation d) All of the above
- 13) The square of the standard deviation is called as ____
a) Range b) Variance
c) Both a and b d) None
- 14) _____is the numerical measure of event occurring?
a) Correlation b) Regression
c) Probability d) None
- 15) Mixed sampling is also called as ____ sampling.
a) Quota b) Non -probability sampling
c) Probability sampling d) None
- 16) _____ error occurs during the rejection of null hypothesis; when it is true.
a) Type I b) Type II
c) Both a and b d) None
- 17) The standard deviation of a sampling distribution of a statistic is known as _____.
a) Mean b) Standard error
c) Mode d) Relative deviation
- 18) Friedman test is alternative to ____
a) Two way ANOVA b) One way ANOVA
c) Both a and b d) None
- 19) _____ is the set of all possible outcomes in a random experiment.
a) Random experiment b) Experiment
c) Sample space d) None
- 20) Central composite design tests variable at
a) Two level b) Three level
c) Four level d) Five level

Q.2 Answer any seven of the following questions

35

- a) What are the measures of central tendency?
- b) Explain the following terms
 - i) Statistics
 - ii) Biostatistics
 - iii) Factor
 - iv) Level
 - v) Randomization of samples
 - vi) Control group
- c) What is normal distribution? Explain shape and properties of its curve.
- d) Differentiate between Null hypothesis and Alternative hypothesis.
- e) Explain one way ANOVA write its significance in statistics and research.
- f) Explain the 2² factorial design with suitable example.
- g) Write information about any two software's used in Pharmaceutical industry.
- h) What is research? Write its objectives. Add a note on Plagiarism.
- i) Calculate the standard deviation of tablets with coating defects collected from 10 different lots. No of tablets: 3, 5, 6, 8, 3, 6, 7, 4, 3, 5

Q.3 Answer any two of the following questions

- a)** Write in detail about measures of dispersion.
- b)** Discuss in brief correlation and regression.
- c)** Explain in detail various sampling techniques

Seat No.	
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Set **P**

B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov-2022
SOCIAL AND PREVENTIVE PHARMACY

Day & Date: Monday, 30-01-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple choice questions**20**

- 1) _____ means preventing and having safety measures to stop disease spread.
 - a) Eradication
 - b) Prevention
 - c) Intervention
 - d) Control
- 2) Micronutrients involve _____.
 - a) Protein
 - b) Carbohydrate
 - c) Fat
 - d) None of the above
- 3) Deficiency of _____ vitamin may causes pernicious anemia.
 - a) C
 - b) B₁₂
 - c) B₃
 - d) D
- 4) Kwashiorkor is occur when there is not adequate _____ in the diet.
 - a) Protein
 - b) Carbohydrate
 - c) Fat
 - d) None of the above
- 5) Which of the following is a viral disease?
 - a) Diphtheria
 - b) leprosy
 - c) Filariasis
 - d) Influenza
- 6) Which of the following is tertiary level of prevention?
 - a) Disability limitation
 - b) Early diagnosis and treatment
 - c) A Health promotion
 - d) Specific protection
- 7) Vitamin B3 also known as _____.
 - a) Niacin
 - b) Riboflavin
 - c) Thiamine
 - d) Adenine
- 8) Chikungunya is primarily spread by _____.
 - a) Viruses
 - b) Protozoa
 - c) Molluscs
 - d) bacteria
- 9) What is the full form of SARS?
 - a) Severe acute respiratory syndrome
 - b) Severe acute Respiratory symptoms
 - c) Severe actual respiratory symptoms
 - d) Serious acute respiratory syndrome
- 10) The key public health challenges are _____.
 - a) Weak and dysfunctional public system of outreach
 - b) Poor environmental health, poor housing
 - c) Many slums not having primary health care facility
 - d) All of the above

- [illegible]

Q.2 Answer any seven of the following questions.

35

- Add a note on malnutrition and its prevention.
- Add a note on impact of urbanization on health and disease.
- Write in brief about transmission, prevention and control of Lymphatic Filariasis.
- Add a note on prevention and control of cholera.
- Write in short objective, functioning and outcomes of National programme for Prevention and Control of deafness.
- What are objectives and functions of WHO?

- g)** Explain in detail objective, functioning and outcomes of pulse polio programme.
- h)** Discuss about PHC
- i)** Write a note on prevention and control of hypertension.

Q.3 Answer any two of the following questions.

20

- a)** Write a note on Integrated Disease Surveillance Programme.
- b)** Explain in detail National malaria prevention programme.
- c)** Add a note on objectives and strategies of National Urban Health Mission.

Seat No.	
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B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov-2022
PHARMACEUTICAL MARKETING MANAGEMENT

Day & Date: Wednesday, 01-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions. 20

- 1) Which of the following is NOT an element of the marketing mix?

a) Distribution	b) Product
c) Target market	d) Pricing
- 2) A place where goods are bought and sold against the price consideration between the buyers and the sellers is called _____.

a) Exchange	b) Market
c) E-commerce	d) Transaction
- 3) The term marketing refers to _____.

a) Advertising, Sales Promotion, Publicity and Public Relational activities
b) A new product needs ideas, Developments, concepts and improvements.
c) Sales Planning, Strategy and Implementation
d) A philosophy that stresses customer value and satisfaction
- 4) The objective of price can be:

a) Profit	b) Market share
c) Cash flow	d) All the above
- 5) At the introduction stage of the Product Life Cycle (PLC), which of the following are the marketer's two main priorities?

a) Launch planning and creating shelf space
b) Generating awareness and stimulating responses
c) Launch planning and generating awareness
d) Creating shelf space and generating awareness
- 6) A fixed percentage of profit is added to the total cost of product is called _____.

a) Cost plus pricing	b) Mark-up pricing
c) Demand based pricing	d) None
- 7) Segmentation is the process of: _____.

a) Splitting of market into groups of similar or different end users within each groups
b) Selecting one group of consumers among several other groups
c) Creating a unique space in the minds of the target consumer
d) None of these
- 8) Which is the unique identity of product _____.

a) Branding	b) Packaging
c) Labelling	d) None of these

Q.2 Answer any seven of the following questions.**35**

- a) Explain the role of market research.
- b) Write in detail about product life cycle.
- c) What do you understand by “advertising”?
- d) Define and describe the duties of Professional sales representatives (PSR).
- e) Differentiate horizontal and vertical marketing.
- f) Give formula to calculate ceiling price of the scheduled formulation
- g) Write a note on rural marketing.
- h) Write a detail note on conflict in channels.
- i) How do 4P's work in marketing of OTC products.

Q.3 Answer any two of the following questions.**20**

- a) What is the importance of consumerism? Discuss in brief consumer responsibilities and consumer right.
- b) Define marketing. Write in short about scope of marketing? Give difference between marketing and selling.
- c) Define Pricing? Give a detail note on pricing method.

**Seat
No.**

Day & Date: Wednesday, 01-02-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- 1) The term used to describe unequal distribution of color on a tablet is _____.
a) Chipping
b) Mottling
c) Sticking
d) None of these
- 2) Which of the following is not a glidant?
a) Purified talc
b) Magnesium stearate
c) Both a & b
d) None of these
- 3) Hard gelatin capsule shell is composed of _____.
a) Gelatin
b) Plasticiser
c) Both a & b
d) None of these
- 4) _____ is a water soluble anti-oxidant.
a) Sodium metabisulfite
b) Butylated hydroxyl anisole (BHA)
c) Both a & b
d) None of these
- 5) _____ is used as an enteric coating material.
a) Cellulose acetate phthalate
b) Acacia
c) Both a & b
d) None of these
- 6) _____ is a chelating agent.
a) Sugar
b) Saccharin
c) Disodium EDTA
d) None of these
- 7) _____ coated tablets should disintegrate in the intestine.
a) Enteric
b) Sugar
c) Both a & b
d) None of these
- 8) The particle size analysis of powder can be done by _____.
a) Assay
b) Friabilator
c) Microscopy
d) None of these
- 9) The term _____ refers to separation of tablet into two or more distinct layers.
a) Lamination
b) Mottling
c) Picking
d) None of these
- 10) Sodium starch glycolate is used as _____ in tablet formulation.
a) Coloring agent
b) Coating agent
c) Super disintegrant
d) None of these
- 11) _____ is a mucoadhesive agent.
a) Purified talc
b) Magnesium stearate
c) Sodium carboxy methyl cellulose
d) None of these

- 12) Which of the following is not used as an enteric coating material?
 - a) Cellulose acetate phthalate
 - b) Acacia
 - c) Both a & b
 - d) None of these
- 13) Emulsion is adosage form _____.
 - a) monophasic
 - b) biphasic
 - c) Both a & b
 - d) None of these
- 14) Aspartame is used as _____.
 - a) flavoring agent
 - b) sweetening agent
 - c) Both a & b
 - d) None of these
- 15) Propyl paraben is used as a _____.
 - a) colouring agent
 - b) coating agent
 - c) Preservative
 - d) None of these
- 16) Highly resistant borosilicate glass is called as type _____ glass.
 - a) III
 - b) II
 - c) I
 - d) None of these
- 17) _____ agents prevent drug degradation in the presence of metallic ions.
 - a) Antimicrobial
 - b) Chelating
 - c) Both a & b
 - d) None of these
- 18) Compressibility index is called as _____.
 - a) Carr's index
 - b) Hausners index
 - c) Both a & b
 - d) None of these
- 19) Sucrose is a _____ sweetener.
 - a) caloric
 - b) non caloric
 - c) Both a & b
 - d) None of these
- 20) _____ are used for increasing the bulk in tablet formulation.
 - a) Binders
 - b) Diluents
 - c) Both a & b
 - d) None of these

Q.2 Answer any seven of the following questions**35**

- a) Explain the weight variation test for tablets as per Indian Pharmacopoeia.
- b) Discuss non-ionic surfactants as excepients in pharmaceutical formulations.
- c) Write a note on binders in tablet formulation.
- d) Discuss Aluminium as packaging material for tablets packing.
- e) Explain the dissolution testing of enteric coated tablets as per Indian Pharmacopoeia.
- f) Write the advantages, disadvantages & applications of Cyclodextrin in pharmacy.
- g) Explain the role of Disintegrants in tablet formulation.
- h) Discuss wet granulation technique used in tablet manufacturing.
- i) Differentiate between uncoated tablets & coated tablets.

Q.3 Answer any two of the following questions.**20**

- a) With a neat labeled diagram explain the Disintegration test apparatus.
- b) Discuss optimization techniques for pharmaceutical product development.
- c) Explain "Glass" as packaging material for pharmaceutical dosage forms.

Seat No.	
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B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov - 2022
Experimental Pharmacology

Day & Date: Wednesday, 01-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions **20**

- 1) CPCSEA is a statutory Committee established under Chapter 4, Section 15 (1) of _____.
 a) Ministry of Forest
 b) Animal welfare board
 c) Supervision on Animal Experiments
 d) Prevention of Cruelty to Animals Act
- 2) Experimental animal, rats belong to the family _____.
 a) Muridae
 b) Muridae
 c) Leporidae
 d) Caviidae
- 3) Experimental animal, frog belong to the family _____.
 a) Muridae
 b) Muridae
 c) Leporidae
 d) Dicroglossidae
- 4) *Cavia porcellus* is biological name of _____.
 a) Rabbit
 b) Guinea pig
 c) Rat
 d) Mouse
- 5) Among the following in which animal Total Blood Volume (ml/kg) is comparatively more?
 a) Mouse
 b) Rat
 c) Guinea pig
 d) Rabbit
- 6) In non-terminal blood collection without replacement of fluids, how much volume of blood can be collected from total circulating blood volume?
 a) Up to 10%
 b) Up to 15%
 c) Up to 20%
 d) Up to 25%
- 7) Which of the following technique is used in terminal blood collection procedure in animal?
 a) Tarsal vein puncture
 b) Tail vein puncture
 c) Cardiac puncture
 d) Marginal ear vein puncture
- 8) Which of the following statement is not correct in case of Orbital Sinus Blood Sample Collection in animals?
 a) Repeated blood sampling is recommended
 b) Skill is required to collect blood
 c) Even a minor mistake will cause damage to the eyes
 d) Two weeks should be allowed between two bleedings
- 9) What is the recommended dose volume for mouse and rat through I.V. (bolus) route of administration?
 a) 1-5 ml/kg
 b) 1-10 ml/kg
 c) 5-10 ml/kg
 d) 5-20 ml/kg

- 10) By intradermal route how much volume of substance is recommended for administration at each injection site
- | | |
|----------------------|-----------------|
| a) <0.5 ml/site | b) >0.5 ml/site |
| c) Up to 0.8 ml/site | d) 1-2 ml/site |
- 11) The technique of separation of skull and brain from the spinal cord by applying pressure posteriorly to the base of skull is known as:
- | | |
|-------------------------|---------------|
| a) Cervical dislocation | b) Pithing |
| c) Stunning | d) Maceration |
- 12) In pharmacological screening methods, radiant heat, physical pressure and irritant chemicals are used to induce _____.
- | | |
|--------------------------------|------------------------------|
| a) Inflammation in the animals | b) Convulsion in the animals |
| c) Pyrexia in the animals | d) Pain in the animals |
- 13) Tail clip method of screening analgesic activity is first described by scientist ____.
- | | |
|--------------|------------|
| a) Dubuissou | b) Haffner |
| c) Leimbach | d) Dennis |
- 14) The convulsive effect of PTZ is considered to be analogous with _____.
- | | |
|---------------------|-----------------------|
| a) Absence seizures | b) Tonic seizures |
| c) Atonic seizures | d) Myoclonic seizures |
- 15) In which phase of Inflammatory responses occur infiltration of leukocytes and phagocytic cells?
- | | |
|-----------------------------------|--------------------------------|
| a) Acute, transient phase | b) Subacute phase |
| c) Subchronic proliferative phase | d) Chronic proliferative phase |
- 16) Tonic-clonic seizures are also known as _____.
- | | |
|-----------------------|-----------------------------|
| a) Drop seizures | b) Grand mal seizures |
| c) Petit mal seizures | d) Complex partial seizures |
- 17) Rota rod apparatus is used for screening the pharmacological agents for _____ property.
- | | |
|-----------------------------|--------------------------|
| a) Analgesic | b) Local anaesthetic |
| c) Skeletal muscle relaxant | d) Sedative and hypnotic |
- 18) Which of the following drug produces Mydriatic action on Eye pupil?
- | | |
|----------------|-----------------|
| a) Pilocarpine | b) Carbachol |
| c) Atropine | d) Phentolamine |
- 19) Central nervous system stimulant/depressant activity of drug can be screened by using _____.
- | | |
|-----------------------|-------------------|
| a) Rota rod apparatus | b) Actophotometer |
| c) Eddy's hot plate | d) Plethysmometer |
- 20) Shay rats are used in screening drugs for _____ actions.
- | | |
|-------------------|----------------------|
| a) Antidepressant | b) Anti-inflammatory |
| c) Anti-ulcer | d) Analgesic |

Q.2 Answer any seven of the following questions**35**

- a) What recommendations to be taken into consideration while selecting animal model for the study?
- b) Write a note on rat as an experimental animal.
- c) Preclinical screening models for antiulcer drugs.
- d) Explain different methods used for screening skeletal muscle relaxant drugs.
- e) Write the procedure for testing effect of drugs (mydriatics and miotics) on rabbit eyes.
- f) Define diabetes mellitus, write its symptoms and list out the different animal models used for screening antidiabetic drugs.
- g) What are the different screening models used for screening antiepileptic drugs? And briefly explain any one model.
- h) Calculate dose of drug required for rat and mouse when human dose is 10 mg/kg (Human $km = 37$, rat $km = 6$ and mouse $km = 3$).
- i) Calculate volume of drug solution to be administered for 195 g of rat and 26 g of mice when dose of a drug is 100 mg/kg for rat and 150 mg/kg for mouse and concentration of drug solution is 12 mg/ml.

Q.3 Answer any two of the following questions.**20**

- a) Write the different screening model used for anti-inflammatory drugs.
- b) Explain the different screening model used for centrally acting analgesic drugs.
- c) Explain sanitation and cleanliness to be maintained as per CPCSEA guidelines for laboratory animal facility.

Seat No.	
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B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov-2022
PHARMACOVIGILANCE

Day & Date: Tuesday, 21-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) Expedited reporting comes under which series of ICH guidelines of pharmacovigilance
 - a) E2A
 - b) E2C
 - c) E2B
 - d) E2D
- 2) Which of following method is part of passive surveillance?
 - a) Spontaneous Reporting
 - b) Case Series
 - c) Targeted spontaneous reporting
 - d) All of above
- 3) What is Active surveillance?
 - a) Voluntary submission of ICSRs by health professionals, pharmaceutical manufacturer to national pharmacovigilance center
 - b) Pursues to determine the particular number of adverse events through constant reorganized process
 - c) Primarily used for characterization of the AEFI profile rates and risk factors
 - d) None
- 4) What is advantage of cohort event monitoring?
 - a) More costly
 - b) Training required
 - c) New to health professionals and PV centers
 - d) Early detection of signal of unsuspected ADRs
- 5) Yellow card system in United Kingdom started in which year?
 - a) 1954
 - b) 1964
 - c) 1974
 - d) 1984
- 6) What is the purpose of pharmacovigilance?
 - a) Rational use of medicine
 - b) Safety of medicine for patient
 - c) Decrease drug harm to patient
 - d) All are correct
- 7) Pharmacovigilance program of India (PVPI) is started in which year?
 - a) 14 July 2010
 - b) 15 April 2011
 - c) 14 April 2010
 - d) 14 Sep 2014

- 8) Which of following is objective of PVPI?
 - a) To create a nation wide system for patient safety reporting
 - b) To identify and analyze the new signal from reported cases
 - c) To analyses benefit risk ratio of marketed medications
 - d) All of above
- 9) WHO international programme for drug monitoring establish in which year?
 - a) 1978
 - b) 1968
 - c) 1988
 - d) 1965
- 10) Which of following is method of casualty assessment?
 - a) Naranjo Scale
 - b) WHO probability Scale
 - c) Jones Scale
 - d) All are correct
- 11) S-Series in ICH guidelines for pharmacovigilance represents
 - a) Development safety uptake report
 - b) Periodic Benefit-Risk evaluation report
 - c) Pre-Clinical Studies
 - d) Clinical Studies
- 12) Teratogenicity Adverse Drug Reaction is example of which type of ADR?
 - a) Type A
 - b) Type B
 - c) Type C
 - d) Type D
- 13) Type D Adverse Drug Reaction is Known as
 - a) Augmented
 - b) Bizarre
 - c) Chronic
 - d) Delayed
- 14) What is Causality Assessment?
 - a) Linking od ADR to suspected medicine
 - b) Clinical Study
 - c) Study of drug safety in animal models
 - d) None
- 15) What is function of CIOMS?
 - a) To make bioethics guidelines
 - b) To make Health Policy Guidelines
 - c) To suggest drug development related issues
 - d) All
- 16) MedDRA is available in which format for European Country
 - a) ASC II Delimited
 - b) UTF-8
 - c) Shift JIS Format
 - d) All
- 17) UMC Stands for
 - a) Uppsala Monitoring Council
 - b) United Medical Council
 - c) Uppsala Monitoring Center
 - d) Unique Method of Counselling
- 18) CDSCO stands for
 - a) Central Drugs Standard Control Organization
 - b) Central Drugs Safety Control Organization
 - c) Central Drugs Safety Control Office
 - d) Central Directory for safety and control of organization
- 19) A Nonproprietary name is also called _____ name.
 - a) Patent
 - b) Proper
 - c) Generic
 - d) Classical

- 20) National Pharmacovigilance Programme was launched by
- | | |
|--------|----------|
| a) WHO | b) FDA |
| c) ICH | d) CDSCO |

Q.2 Answer any seven of the following questions

35

- a) Discuss historical development and hierarchy level in MedDRA.
- b) Describe WHO international drug monitoring programme.
- c) Describe Eudra vigilance medical product dictionary.
- d) Describe passive surveillance along with its types.
- e) Explain in detail adverse events following immunization.
- f) Describe organization, history and objectives of ICH.
- g) Outline the content of Individual Case Safety report.
- h) What is CIOMS forms? Explain in detail CIOMS working groups
- i) Compare and contrast Pharmacovigilance regulations of India, UK, & USA.

Q.3 Answer any two of the following questions.

20

- a) What are the objectives of pharmacovigilance programme of India? Explain in details various methods of monitoring, detecting and reporting of ADRs.
- b) What is Vaccine safety surveillance? Explain in detail different types of pharmacovigilance methods used for passive and active surveillance.
- c) Define Adverse Drug Reactions. Classify ADRs with suitable examples. Explain the mechanism of Type-B adverse drug reactions.

**Seat
No.**

Day & Date: Tuesday, 21-02-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- 1) Reference material like alumina is generally used in _____.
a) TG
b) DSC
c) Potentiometry
d) Conductometry
- 2) Dynamic air atmosphere in TG means _____.
a) Nitrogen free from oxygen
b) Air from atmosphere
c) Compressed air
d) None
- 3) The parameter measurement in DTA is _____.
a) dm/dT vs. temp
b) dT vs. temp
c) dH vs. temp
d) mass vs. temp
- 4) Which of the following change gives endothermic peak in DTA?
a) Melting
b) Sublimation
c) Oxidation-reduction
d) All of the above
- 5) _____ ionization method may result in disappearance of molecular ion peak.
a) Chemical
b) Electron spray
c) MALDI
d) Electro impact
- 6) In _____ thermo gravimetry sample is heated at constant temperature.
a) Isothermal
b) Dynamic
c) Quasistatic
d) Static
- 7) The most intense peak in the mass spectrum is called as _____.
a) Base peak
b) Rearrangement ion peak
c) Isotope ion peak
d) Molecular ion peak
- 8) _____ ion peaks gives information about molecular mass of the analyte.
a) Metastable
b) Fragment
c) Isotope
d) Molecular
- 9) _____ ion sources are used for studying high molecular weight bimolecular samples.
a) Electro spray ionization
b) MALDI
c) FAB
d) EI
- 10) Time of flight mass analyzer, the separation of the ions takes place due to different _____ of ions.
a) Magnetic dipole
b) Nuclear spin
c) Velocities
d) Potential
- 11) X rays have larger wavelengths than _____.
a) Gamma rays
b) Beta rays
c) Microwave
d) Visible light

- 12) No of orientation for magnetic nuclei is given by _____ formula.
 - a) $2I + 2$
 - b) $2I + 1$
 - c) $2I - 2$
 - d) $2I - 1$
- 13) The chemical shift value for carboxylic proton is _____ Delta ppm.
 - a) 10 – 12
 - b) 4 – 6
 - c) 9.5 – 10
 - d) 7 – 9
- 14) Solvent extraction is governed by which law?
 - a) Boyle's law
 - b) Ostwald dilution law
 - c) Beer's law
 - d) Nernst distribution law
- 15) Number of signals for 1-propanol in NMR is _____.
 - a) 3
 - b) 2
 - c) 4
 - d) 5
- 16) Crystal structure can be studied by using _____.
 - a) X-ray absorption method
 - b) X-ray diffraction method
 - c) X-ray fluorescence method
 - d) X-ray emission method
- 17) In NMR spectroscopy if the secondary magnetic field opposes the applied magnetic field then the proton is said to be _____.
 - a) Deshielded
 - b) Shifted
 - c) Hydrogen bonded
 - d) Shielded
- 18) RIA was developed by _____.
 - a) Lewis and Bronstand
 - b) Chals and Wastone
 - c) Vector and Logan
 - d) Berson and yalow
- 19) Which of the following reference material is used for calibration of FTIR instrument?
 - a) Polystyrene
 - b) Polyethylene
 - c) Polypropylene
 - d) All of the above
- 20) _____ peak has mass to charge ratio more than the molecular ion peak.
 - a) Metastable ion
 - b) Fragment ion
 - c) Isotopic
 - d) All of these

Q.2 Answer any seven of the following questions.

35

- a) Define Thermo-gravimetry (TG). What information is obtained from TG curve?
- b) Give principle and applications of Differential Scanning Calorimetry.
- c) Write a note on types of ions produced in Mass Spectrometry.
- d) Classify ion sources used in Mass Spectrometry. Explain Electron Impact source.
- e) What is the range of X ray? Write a note on X Ray Production.
- f) How UV Visible spectrophotometer is calibrated?
- g) Give principle and applications of proton NMR.
- h) Write principle and experimental procedure involved in Solid phase extraction.
- i) What are the advantages of hyphenated techniques?

Q.3 Answer any two of the following questions.

20

- a) Describe in detail factors affecting DTA curve.
- b) Explain in detail factors influencing chemical shift value.
- c) Discuss principle, types, procedure and applications of radioimmuno assay.

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Max. Marks: 75

20

- 12) Surfactants are incorporated in the preparation of Dentifrice as they _____.
 - a) aid in preparation of surface film
 - b) produce foam
 - c) removes debris
 - d) All of the above
- 13) The After Shave preparations are basically applied _____.
 - a) to cool & refresh the skin
 - b) to overcome irritation on the skin
 - c) both a & b
 - d) None of these
- 14) Patch testing is a well-established method of diagnosing _____.
 - a) spreadability of creams
 - b) contact dermatitis
 - c) both a & b
 - d) None of these
- 15) Which gland is responsible for sebum secretion?
 - a) Sebaceous gland
 - b) Eccrine gland
 - c) both a & b
 - d) None of these
- 16) _____ is not a natural emulsifier.
 - a) Acacia
 - b) Tween
 - c) both a & b
 - d) None of these
- 17) Chlorhexidine diacetate is used as _____ in deodorant powder.
 - a) adhesive
 - b) colouring agent
 - c) an antiseptic
 - d) None of these
- 18) Thymol is used as _____ in shampoo formulation.
 - a) foaming agent
 - b) anti-dandruff agent
 - c) both a & b
 - d) None of these
- 19) Schedule _____ gives standards for cosmetics as per the D & C act 1940.
 - a) S
 - b) M
 - c) J
 - d) None of these
- 20) Schedule _____ gives the list of dyes, colours & pigments permitted in cosmetics.
 - a) Q
 - b) P
 - c) R
 - d) None of these

Q.2 Answer any seven of the following questions.

35

- a) Classify Cosmetics with examples.
- b) Explain the formulation of Vanishing cream. Enumerate its advantages & disadvantages.
- c) Discuss the common problems associated with teeth in the oral cavity.
- d) Differentiate between Cosmetics & Cosmeceuticals with examples.
- e) Discuss the formulation of Conditioning shampoo. Enumerate its advantages & disadvantages.
- f) Discuss teeth whitening ingredients used in Toothpaste. Add a note on Sensitive teeth
- g) Explain the role of Neem & Clove in oral care products.
- h) Explain the principle & procedure involved in measurement of Transepidermal water loss.
- i) What causes prickly heat? Discuss the ingredients used in prickly heat cosmetics.

Q.3 Answer any two of the following questions.

20

- a)** Explain structure of hair. Explain the hair growth cycle.
- b)** Classify Sunscreens. Discuss the ingredients used in Sunscreens.
- c)** Enumerate the reasons for Oily skin & Dry skin. Discuss the cosmetics used for Oily skin & Dry skin.

Seat No.	
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Set **P**

B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov-2022
QUALITY CONTROL AND STANDARDIZATION OF HERBALS

Day & Date: Wednesday, 08-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.**20**

- 1) What are the two detection methods applied during TLC test developed by USA?
 - a) Iodine vapour and ninhydrin vapour
 - b) iodine vapour
 - c) ninhydrin vapour
 - d) None
- 2) Primary screening of imported pharmaceutical substances is carried out to check whether the consignment contain _____.
 - a) the right drug
 - b) the amount of drug
 - c) the right drug(s) in the right amount (s)
 - d) None
- 3) Which HCL is used for determination of acid insoluble ash value?

a) 1M HCL	b) 2M HCL
c) 0.1 HCL	d) 0.01 HCL
- 4) Which drugs gives positive test for hemolytic property?

a) Araliaceae	b) Sapindaceae
c) Dioscoreaceae	d) All of the above
- 5) The cGMP of Herbal Drugs is a Part Of _____.

a) Quality	b) Quality Control
c) Quality Assurance	d) Manufacturing
- 6) Quality systems involves _____ system of the following.

a) Cleaning	b) Designing
c) Production	d) Evaluation
- 7) Stability testing drug is necessary to determine _____.

a) Toxicity	b) Potency
c) Drug interaction	d) Shelf life
- 8) Analytical Validation comes under _____.

a) Q1 Guidelines	b) Q2 Guidelines
c) Q3 Guidelines	d) Q4 Guidelines
- 9) _____ What is the full form of ICH?
 - a) International conference on harmonization
 - b) International council of harmonization
 - c) Intermittent council on harmonization
 - d) Intermittent conference on harmonization

- 10) Clinical trials of geriatric population comes under _____.
a) Quality guidelines b) Safety guidelines
c) Efficacy guidelines d) Multidisciplinary guidelines
- 11) Factors affecting stability of herbal medicine _____.
a) Physical instability b) chemical instability
c) Environmental factors d) All of the above
- 12) Test parameters used in evaluation of herbal samples are _____.
a) Microbiological testing b) Dissolution test
c) Test for heavy metal d) All of the above
- 13) Which licencing authority grant permission to manufacture and import a new phytopharmaceutical in India?
a) Ministry of health and family welfare
b) Ministry of Human resource development
c) Drug Controller General of India
d) Ministry of AYUSH
- 14) Labelling of Herbal product contain the following information _____.
a) Date of manufacture and expiry
b) Name of drug
c) The name, address of manufacture and Number of the license under which the drug has been manufactured
d) All of the above
- 15) Good Manufacturing Practices in Drugs and Cosmetics Act 1940 and Rules comes under _____.
a) Schedule T b) Schedule C
c) Schedule M d) Schedule X
- 16) Which of the following technique would be most useful to identify as well as quantify the presence of known impurity in drug substance?
a) NMR b) Adsorption
c) Gel chromatography d) HPTLC
- 17) Storage and distribution arrangements for the product _____.
a) Are not the responsibility of the manufacturer once it has left his factory
b) Have no impact on product shelf-life or product quality
c) Have to be satisfactory as far as possible throughout the supply chain to ensure quality is maintained
d) Is the responsibility of government
- 18) As per Drug & Cosmetic Rules 1945, no 161(3), which product is allowed to contain high content of alcohol _____.
a) Drakshasava b) Dasmularistha
c) Mahadrakshasava d) Pancharistha
- 19) The use of Indian hemp plant requires specific license under which of the following act _____.
a) Medicinal & Toilet Preparations Act
b) Drugs & Magic Remedies Act
c) Drugs and Cosmetic Act
d) Narcotic Drug and Psychotropic substance act

- 20) Good manufacturing practices are directed primarily at _____.
a) Ensuring that all products are tested according to specifications
b) Ensuring that all products are made in accordance with the formula
c) Minimizing risks inherent in production that cannot be prevented
thorough testing of finished products
d) Preventing cross-contamination

Q.2 Answer any seven of the following questions

35

- a) Write the role of chemical and biological markers in evaluation of herbal medicines.
- b) Brief the guidelines on safety monitoring of herbal medicines.
- c) Note on importance of Pharmacovigilance system in herbal medicine.
- d) Write the general requirements of GMP as per D&C Act.
- e) How do you evaluate the commercial herbal raw materials intended for medicinal use?
- f) Write the Research guidelines for evaluating the safety of herbal medicines.
- g) Write Quality control guidelines of herbal drugs as per ICH.
- h) What is meant by monograph analysis as per Pharmacopoeia?
- i) Write short note on Quality assurance in herbal industry.

Q.3 Answer any two of the following questions.

20

- a) Explain stability testing of herbal medicines.
- b) Write in detail WHO Guidelines on GACP for medicinal plants.
- c) Explain various Regulatory requirements for Herbal medicines in India.

Seat No.	
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B. Pharmacy (Semester - VIII) (CBCS) Examination: Oct/Nov-2022
PHARMACEUTICAL REGULATORY SCIENCE

Day & Date: Wednesday, 08-02-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) Which of the following is a part of the Abbreviated New Drug Application (ANDA) Review?
 - a) Review of preclinical trial results
 - b) Determination of safety in human use
 - c) Authorization to ship across the state lines
 - d) Bioequivalence study
- 2) How many healthy volunteers are used in Phase II of a clinical trial?
 - a) No humans are used in Phase II of a clinical trial
 - b) 20 – 100
 - c) 20 – 300
 - d) 300 – 3000
- 3) How long does a drug patent last?

a) 5 Years	b) 10 Years
c) 20 Years	d) Patent does not expire
- 4) What is the main purpose of phase II of a clinical?
 - a) To initially assess its effectiveness and to further study its safety
 - b) Tests the safety and how well a new treatment works compared with a standard treatment
 - c) Studies the side effects caused over time by a new treatment after it has been approved and is on the market
 - d) All of the above
- 5) How many volunteers are in Phase III trials?

a) 100-300	b) 300-500
c) 500-700	d) 300-3000
- 6) Bioequivalence study is part of which application process _____.

a) IND	b) NDA
c) ANDA	d) All of the above
- 7) As per ANDA requirements the bioequivalence of test to reference formulation is _____.

a) 70-130%	b) 80-120%
c) 100-150%	d) 70-80%
- 8) In US the New Chemical Entity Exclusivity last for _____ years.

a) 8	b) 7
c) 6	d) 5
- 9) CTD stands for _____.

a) Common Technical Document	b) Chemical Technique for Drug
c) Common Transfer Device	d) None of the above

- 10) The first step in the generic drug development process is _____.
 - a) Target Identification
 - b) Drug candidate selection
 - c) Lead Optimization
 - d) Target Validation
- 11) Lists of FDA-licensed biological products and their associated IPR is available in _____.
 - a) Orange book
 - b) Black book
 - c) Red book
 - d) Purple book
- 12) Select the responsibility/s of RA personnel _____.
 - a) To analyze the content of the active ingredient in the formulation
 - b) Work with federal, state and local governing agencies to get the approval for drug
 - c) To undertake stability studies of the drug products
 - d) To supervise the production of the formulation
- 13) Identify the relevant regulatory body in India for approval of drugs.
 - a) BLA
 - b) CBER
 - c) CDSCO
 - d) CDER
- 14) CTD is divided into _____ modules.
 - a) 6
 - b) 5
 - c) 4
 - d) 3
- 15) Which of the following is regulatory authority of Japan?
 - a) Pharmaceutical and Medical Devices Agency
 - b) Therapeutic Goods Administration
 - c) Ministry of Health, Labor and Welfare (MHLW)
 - d) Central Drug Standard Control Organization
- 16) Which of the following is drug regulatory authority of UK?
 - a) Medicines and Healthcare Products Regulatory Agency
 - b) US-Food and Drug Administration
 - c) Central Drugs Standard Control Organization
 - d) European Medicines Agency
- 17) The objective of US FDA is _____.
 - a) To ensure the safety, quality, and effectiveness of medical products and food produced in India for export to the United States.
 - b) Approval of medical products for marketing in India
 - c) Protecting and promoting public health
 - d) Manufacture of drugs in USA for the purpose of export to India
- 18) BLA stands for _____.
 - a) Biologies License Application
 - b) Biosimilar License Application
 - c) Bioavailability License Application
 - d) Both B and C
- 19) Hatch-Waxman Act framework includes _____.
 - a) Approve manufacturing of sutures and ligatures
 - b) Streamlining the process for branded pharmaceutical products
 - c) Approve medical devices
 - d) Streamlining the process for generic pharmaceutical approvals
- 20) _____ product does not require a BLA.
 - a) Vaccine
 - b) Serum
 - c) Blood, blood component or derivative
 - d) Glucagon

Q.2 Answer any seven of the following questions**35**

- a) Explain in detail phases of clinical trial.
- b) Give organizational structure of US FDA. Enlist types of applications submitted to US FDA.
- c) Write a note on Indian scenario of generic drug products.
- d) What is federal Register? What are its objectives?
- e) What is therapeutic Equivalency Codes? Discuss them in detail.
- f) Describe various changes to approved NDA and ANDA.
- g) What is DMF? Elaborate parts of DMF.
- h) What is "Purple Book"? Elaborate.
- i) Discuss safety monitoring in clinical trials.

Q.3 Answer any two of the following questions.**20**

- a) Discuss in detail stages of drug discovery and development process.
- b) What is IND? Explain in detail contents of IND. Give importance of IND.
- c) What is Good Clinical Practice? Discuss 13 core principles of ICH-GCP.

Seat No.	
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Set **P**

B. Pharmacy (Semester - I) (CBCS) Examination: Oct/Nov-2022
Human Anatomy and Physiology-I

Day & Date: Tuesday, 11-04-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple choice questions**20**

- 1) Which major organ lies deep to the right hypochondriac region?
 - a) The stomach
 - b) The spleen
 - c) The liver
 - d) The duodenum
- 2) Which plane of the body divides it into dorsal and ventral regions?
 - a) Transverse
 - b) Axial
 - c) Coronal
 - d) Sagittal
- 3) Which one of the following cell types is found in epithelial tissue?
 - a) plasma cells
 - b) leucocytes
 - c) keratinocytes
 - d) chondroblast
- 4) An anatomical section that separates the body into right & left position is a _____.
 - a) Frontal
 - b) Transverse
 - c) Coronal
 - d) Sagittal
- 5) Which structure within the cell produces ATP (adenosine triphosphate)?
 - a) Mitochondria
 - b) Nucleus
 - c) Peripheral proteins
 - d) Endoplasmic reticula
- 6) Adipocytes are found in which type of tissue?
 - a) Muscle tissue
 - b) Epithelial tissue
 - c) Nervous tissue
 - d) Connective tissue
- 7) Which skin layer is the most superficial?
 - a) Stratum lucidum
 - b) Stratum corneum
 - c) Papillary dermal layer
 - d) Reticular dermal layer
- 8) What is the most common protein in the epidermis?
 - a) Elastin
 - b) Keratin
 - c) Melanin
 - d) Cholesterol
- 9) Which of the following is a function of the skeletal system?
 - a) Haemopoiesis
 - b) Hemostasis
 - c) Peristalsis
 - d) Glycogenolysis
- 10) Freely movable joints are also known as _____.
 - a) Fibrous joints
 - b) Cartilaginous joints
 - c) Amphiarthroses
 - d) Synovial joints
- 11) Which are the bones of the fingers known as?
 - a) Short bones
 - b) Metacarpals
 - c) Carpals
 - d) Phalanges
- 12) What are the bones forming cells called?
 - a) Osteons
 - b) Osteocytes
 - c) Osteoclasts
 - d) Osteoblast

- 13) Which type of white blood cell has the largest percentage in a blood sample?
 - a) Neutrophils
 - b) Basophils
 - c) Eosinophil's
 - d) Lymphocytes
- 14) A person with type O blood cells antibodies _____.
 - a) Anti-A
 - b) Anti-B
 - c) Both anti-A & Anti- B
 - d) Anti-D
- 15) Blood cell formation (haemopoiesis) occurs in which of the following structures?
 - a) Red marrow
 - b) Yellow marrow
 - c) Medullary cavity
 - d) Epiphyseal plate
- 16) The distal portion of the small intestine contains clumps of lymph follicles called _____.
 - a) Islets of Langerhans
 - b) Payer's patches
 - c) Rugae
 - d) Villi
- 17) Lymphoid tissue that appears as a swelling of the mucosa in the oral cavity is called _____.
 - a) Tonsil
 - b) Thymus
 - c) Payer's patch
 - d) Appendix
- 18) All the spinal nerves in peripheral nervous system are classified as _____.
 - a) Temporal nerves
 - b) Sensory nerves
 - c) Motor nerves
 - d) Mixed nerves
- 19) What is the name of the valve between the left atrium & the left ventricle?
 - a) Mitral valve
 - b) Tricuspid valve
 - c) Semi-lunar valve
 - d) Aortic valve
- 20) What is the outermost layer of the heart wall known as?
 - a) Epicardium
 - b) Pericardium
 - c) Parietal membrane
 - d) Endocardium

Q.2 Answer any seven of the following questions.

35

- Write a note on homeostasis & feedback systems.
- Define blood pressure & explain factors affecting on blood pressure.
- Describe the origin & function of cranial nerves.
- Describe the composition & function of lymph.
- What is blood clotting & explain its mechanism?
- Define blood & give its different functions.
- Enlist the functions of skeleton system
- Describe the structure & function of pelvic girdle.
- Define & classify joints.

Q.3 Answer any two of the following questions.

20

- Enlist different systems of human body & give their components & function.
- Draw a neat, labeled diagram of conduction system of heart. Explain in detail cardiac cycle.
- Give the anatomy of ear.

Day & Date: Thursday, 13-04-2023
Time: 10:00 AM To 01:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- Page 1 of 2

- 12) _____ is protophilic solvent.
a) Pyridine
b) ethylene diamine
c) Acetic acid
d) Both a and b
- 13) EDTA is a
a) Hexadentate ligand
b) Tetradentate ligand
c) Octadentate ligand
d) Pentadentate ligand
- 14) Assay of sodium benzoate based on _____.
a) Acid base titration
b) Complexometric titration
c) Precipitation titration
d) Non aqueous titration
- 15) Calcium gluconate are assayed by _____.
a) Direct titration
b) Back titration
c) Replacement titration
d) Alkali metric titration
- 16) The sulpha drugs are titrated with
a) Sodium sulphate
b) Sodium nitrate
c) Sodium nitrite
d) None of above
- 17) _____ is the determination of the amount of a particular element, species or compound present in a sample.
a) Quantitative analysis
b) Qualitative analysis
c) Limit test
d) None of the above
- 18) _____ is a process involving the transfer of electrons from one element or ion to another
a) Redox reaction
b) Precipitation
c) Complexometry
d) Conductometry
- 19) The metal indicator complex must possess sufficient stability to
a) Resist dissociation
b) Sharp colour change
c) a and b
d) None of the above
- 20) Oxidation reduction reaction in which changes in the _____ of reacting elements takes place.
a) Valency
b) P_H
c) Volume
d) Absorbance

Q.2 Solve any Two

20

- a) Discuss in detail gravimetric analysis.
- b) Discuss non aqueous titrations? Write note on types of solvents used in non-aqueous titrations. Explain assay of Sodium Benzoate.
- c) Define pharmaceutical analysis and discuss different techniques of analysis.

Q.3 Solve any Seven

35

- a) Discuss neutralization curve.
- b) What is primary and secondary standards? Discuss ideal properties of the primary standard
- c) What is redox titration? Discuss various types of redox titration.
- d) Define complexometric titration? Write note on its types.
- e) Explain dropping mercury electrode
- f) Write note on Diazotization titration.
- g) Explain Volhard's method and modified Volhard's method
- h) Explain the principle of Mohr's method.
- i) Write factors affecting conductance & give details of conductivity cell.

Seat No.	
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B. Pharmacy (Semester - I) (CBCS) Examination: Oct/Nov-2022
Pharmaceutics - I

Day & Date: Monday, 17-04-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) The first edition of IP was published in _____.
a) 1965 b) 1975
c) 1955 d) 1985
- 2) Elixirs are _____ Solutions.
a) Aqueous b) Non- aqueous
c) Hydroalcoholic d) Oily
- 3) Aqueous iodine solution is also known as _____.
a) Mandl's Paint b) Lugol's solution
c) Both a & b d) None of the above
- 4) The chairman of the first edition of IP was _____.
a) Dr. B.N. Ghosh b) Dr. B. Mukherjee
c) Dr. Nityanand d) Mr. PrasanaTotta
- 5) The Capsule shells are made up of _____ like substances
a) Gelatine b) Rice flour
c) Fructose d) Dextrose
- 6) Which one of the following Powdersis usedexternally _____?
a) Dusting powder b) Bulk powder
c) Divided powder d) Effervescent powders
- 7) The component present in solution in small quantity is known as _____.
a) Solvent b) Solution
c) Solute d) Liquid
- 8) Throat paints are _____ liquid preparations.
a) Viscous b) Non viscous
c) Solid d) Gas
- 9) Enemas are also called as _____.
a) Elixir b) Suspension
c) Emulsion d) Clystric
- 10) A genetically determined abnormal response to a drug is known as _____.
a) Idiosyncrasy b) Tolerance
c) Genetic Polymorphism d) Salicylism
- 11) Saccharin is an example of _____.
a) Natural sweetening agent b) Flavouring agent
c) Artificial sweetening agent d) Humectant
- 12) Disodium EDTA is an example of _____.
a) Sweetening agent b) Flavouring agent
c) Chelating agent d) Preservative

- 13) BCS stands for _____.
 a) Biopharmaceutical classification system
 b) Biological classification system
 c) Binominal classification system
 d) Basic classification system
- 14) The superscription is represented by a symbol _____.
 a) Rx
 b) Dc
 c) Doc
 d) Ph
- 15) Terpin Hydrate is _____ in water
 a) Soluble
 b) Insoluble
 c) Slightly soluble
 d) None of the above
- 16) Oral rehydration salt is used in
 a) Oral rehydration therapy
 b) Anemia
 c) Diabetes
 d) Cancer
- 17) Turpentine Liniment is used as _____.
 a) Counter Irritant
 b) Antiseptic
 c) Anthelmintic
 d) Precipitate Proteins
- 18) Cocoa butter is obtained from seeds of _____.
 a) Butyrospermumparkii
 b) Theobroma cocoa
 c) Both a & b
 d) None of the above
- 19) Zinc oxide dusting powder is used as _____.
 a) Cathartic
 b) Antipyretic
 c) Astringent
 d) None of the above
- 20) Carbopol 934 NF is used as _____.
 a) Lubricant
 b) Gelling agent
 c) Surfactant
 d) None of the above

Q.2 Answer the following questions (Any Seven)**35**

- a) Write history of pharmaceutical education in India.
- b) Write about Indian Pharmacopoeia 2018.
- c) Define dosage form. Explain need of dosage form.
- d) Elaborate the term Physical incompatibility.
- e) Write different types of suppository.
- f) What are monophasic liquids? Explain any two.
- g) Differentiate between flocculated and deflocculated suspensions.
- h) Write a note on effervescent granules.
- i) Discuss Measurement system used in pharmacy

Q.3 Answer the following questions (Any Two)**20**

- a) What are the different parts of Prescription? Write one sample prescription.
- b) Write in detail about solubility enhancement techniques.
- c) Define and classify semisolid dosage forms. Add a note on factors affecting dermal penetration of drug.

Seat No.	
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B. Pharmacy (Semester - I) (CBCS) Examination: Oct/Nov-2022
Pharmaceutical Inorganic Chemistry

Day & Date: Wednesday, 19-04-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions. **20**

- 1) Which of the following is not a properties of acid?

a) Taste sour	b) Turn blue litmus red
c) React with base to form water	d) Fell slippery on the skin
- 2) Which of the following is not a properties of base?

a) Taste bitter	b) Turn red litmus blue
c) React with salt to form acid	d) Fell slippery on the skin
- 3) In general when an acid and base are mixed _____.

a) A new acid and a salt are formed
b) A new base and a salt are formed
c) No reaction occurs
d) A salt and water are formed
- 4) The body fluids found within the cell is called _____.

a) Plasma	b) Extracellular Fluid
c) Interstitial fluid	d) Intracellular fluid
- 5) Blood plasma belongs to _____.

a) Intracellular fluid	b) Extracellular Fluid
c) Interstitial fluid	d) Both b & c
- 6) Most solutes in body fluid are _____.

a) Electolytes	b) Proteins
c) Sugar	d) Amino Acids
- 7) Fluoride inhibits carries formation via _____.

a) Downward acid solubility of enamel
b) Bacterial inhibition
c) Both a) and b)
d) None of these
- 8) Hydroxyapatite is a mixture Ca^{++} salt of _____.

a) CO_3^-	b) PO_4^-
c) OH	d) All of these
- 9) Dental carries is a medical term of _____.

a) Cleaning action	b) Polishing action
c) Tooth decay	d) None of these
- 10) Fluoride can be administered either _____.

a) Orally	b) Topically
c) Both a & b	d) None of these
- 11) Productive cough produces _____.

a) Mucus	b) Vomiting
c) Amalgam	d) None of these

- 12) Which cough does not produce mucus?
 - a) Productive cough
 - b) Both a) and c)
 - c) Non productive cough
 - d) None of these
- 13) Which inorganic compound is used as Emetic?
 - a) Ammonium chloride
 - b) potassium antimony tartaral
 - c) Potassium iodide
 - d) Potassium citrate
- 14) An important antidote in the treatment of cyanide poison is
 - a) Ethanol
 - b) Atropine
 - c) Desferioxamine
 - d) Sodium thiosulphate
- 15) In case of poisoning, activated charcoal acts to reduce absorption of the substance by _____.
 - a) Increasing osmotic pressure of the intestinal contents
 - b) Shortening transit time thorough the gut
 - c) Binding to the poison molecules
 - d) Stimulating the chemoreceptor trigger zone
- 16) When a poison is inhaled what methods you will be thinking of to manage the case?
 - a) Carrying out a gastric lavage
 - b) Thinking of an antidote
 - c) Administration of an antidote
 - d) Both b) and c)
- 17) What is effect of astringents on tissues?
 - a) Contraction
 - b) Both a) & c)
 - c) Shrinkage
 - d) None of these
- 18) How do astringents act?
 - a) Lipid precipitation
 - b) Bacterial inhibition
 - c) Protein precipitant
 - d) Enzymatic catalysis
- 19) What is the chemical formula of Alum?
 - a) $KAl(SO_4)_2 \cdot 12H_2O$
 - b) $K_2SO_4 \cdot 12H_2O$
 - c) $KSO_4 \cdot 2H_2O$
 - d) $K(SO_4)_2 \cdot 12H_2O$
- 20) Radioactivity was discovered firstly by _____.
 - a) Henry Becquerel
 - b) Rutherford
 - c) J. J. Thomas
 - d) Madame curie

Q.2 Answer the following questions (Any Seven)**35**

- a) Highlights precaution and pharmaceutical application of radiopharmaceuticals
- b) Note on astringent
- c) Define haematinic and note on haematinic agent in detail.
- d) What are dentifrices explain with example? Explain role of fluoride helps in maintaining oral hygiene?
- e) Write in detail limit test for chloride
- f) Explain electrolyte used in replacement therapy.
- g) What is buffer solution? How many types of it and explain it.
- h) Explain in detail iodine and its preparations.
- i) Give a detailed account of the history of Pharmacopoeia

Q.3 Answer the following questions (Any Two)**20**

- a) Explain the principle and procedure involved in the limit test of arsenic with a neat Labelled diagram of Gutzeit's apparatus.
- b) Define and classify GIT agents and explain in detail acidifier with examples.
- c) Define Emetics. how they act and explain any two inorganic agents used as emetics.

**Seat
No.**

Day & Date: Tuesday, 11-04-2023
Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- The outer covering of the brain is called cerebral cortex. It is covered with _____.
 - Axons
 - Dendrites
 - Nerve cells
 - Pons
- Each cerebral hemisphere is divided into how many lobes?
 - 2
 - 3
 - 4
 - 5
- The spinal cord is continuous with which region of the brain?
 - Cerebrum
 - Medulla oblongata
 - Midbrain
 - Pons
- Process of elimination of all undigested food from body is classified as _____.
 - Digestion
 - Defecation
 - Refraction
 - Diffraction
- Gastric glands secreted gastric juice that contains _____.
 - Pepsin
 - Mucin
 - Hydrochloric acid
 - All the above
- Where is most fat- digesting enzymes produced?
 - Small intestine
 - Gall bladder
 - Liver
 - Pancreas
- Basal metabolic rate shall be measured while a person is _____.
 - Jogging
 - Going to work
 - Resting
 - Sweating
- ATP is hydrolyzed in to _____.
 - ADP
 - Inorganic phosphate
 - Both A& B
 - Organic phosphates
- Due to breakdown and collapse of _____ lung tissue is destroyed.
 - Eustachian tubes
 - Bronchioles
 - Alveoli
 - Micro trachea
- Which of the following are structural features of the trachea?
 - C-Shaped cartilage
 - Smooth muscle fibers
 - Cilia
 - All of the above
- Peristaltic contractions occur in the _____.
 - Urethra
 - Bladder
 - Ureters
 - Urethra, bladder, & ureters

- 12) The functional unit of the kidney is called
 - a) The renal hilus
 - b) The renal corpuscle
 - c) The nephron
 - d) Bowmans capsule
- 13) Which of the following is not a pancreatic hormone?
 - a) Glucagon
 - b) Aldosterone
 - c) Insulin
 - d) Somatostatin
- 14) The hormone _____ causes the breast to increase its synthesis of milk.
 - a) PRL
 - b) Oxytocin
 - c) PRF
 - d) PIF
- 15) Somatostatin is secreted by:
 - a) Pancreatic delta cells
 - b) Pancreatic polypeptide cells
 - c) The zona fasciculata
 - d) The posterior pituitary
- 16) Which of the following is not a necessary component of translation?
 - a) Anticodon
 - b) mRNA
 - c) Ligase
 - d) Amino acid
- 17) In meiosis, how many daughter cells are produced?
 - a) 8
 - b) 6
 - c) 4
 - d) 2
- 18) Which part of a neuron transmits an electrical signal to a target cell?
 - a) Dendrites
 - b) Soma
 - c) Cell body
 - d) axon
- 19) Which part of the large intestine attaches to the appendix?
 - a) Cecum
 - b) Ascending colon
 - c) Transverse colon
 - d) Descending colon
- 20) The movement of air within the respiratory system is correctly referred to as _____.
 - a) Breathing
 - b) Inhalation
 - c) Exhalation
 - d) Ventilation

Q.2 Answer any seven of the following questions.

35

- a) Explain renin-angiotensin-aldosterone system.
- b) Classify nervous system. Enlist the functions of CSF.
- c) Draw a neat, labeled diagram of urinary system showing its different parts. Add functions of kidney.
- d) Write a note on pancreas.
- e) Give structure and functions of cerebrum.
- f) Draw a neat, labeled diagram of eye. Discuss the physiology of vision in short.
- g) Discuss anatomy and physiology of adrenal gland.
- h) Enlist different methods of artificial respiration and describe any one in detail.
- i) Define and mention the role of juxta glomerular apparatus. Explain acid base balance of urinary system in short.

Q.3 Answer any two of the following questions.

20

- a) Draw a neat labeled diagram of digestive system. Discuss anatomy and physiology of liver.
- b) Discuss the physiology of Menstruations.
- c) Discuss about the structure of kidney. Brief about the physiology of urine formation.

Seat No.	
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B. Pharmacy (Semester - II) (CBCS) Examination: Oct/Nov-2022
Pharmaceutical Organic Chemistry- I

Day & Date: Thursday, 13-04-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) UPAC name of $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{COOH}$ is
 a) 4-hydroxy pentanoic acid b) 1-carboxy-3-butanoic acid
 c) 1-carboxy-4-butanol d) 4-carboxy-2-butanol
- 2) Acetic acids undergoes dehydration with P_2O_5 to form _____.
 a) Acetic chloride b) Acetic anhydride
 c) Acetic acid d) Acetaldehyde
- 3) Primary amine can be identified by using _____.
 a) HCl b) CHCl_3
 c) NaOH d) $\text{CHCl}_3 + \text{KOH}$
- 4) Carboxylic acid reacts with alcohol in presence of H_2SO_4 to form _____.
 a) Ester b) Alcohol
 c) Alkene d) Amine
- 5) What is the catalyst used in the hydrogenation of acetyl chloride to produce ethanol?
 a) Pt/BaSO_4 b) Pt/CuSO_4
 c) Pd/BaSO_4 d) Pd/CuSO_4
- 6) Aldehydes undergoes reduction with the presence of $\text{NaOH}/\text{NH}_2\text{NH}_2$ to give alkane this reaction is known as _____.
 a) Clemmensen reduction b) Wolf-Kishner reduction
 c) Rosenmund reduction d) Reformatsky reaction
- 7) Oxidation of aldehydes in presence of potassium dichromate to give _____.
 a) Acids b) Alcohols
 c) Amines d) Alkane
- 8) Formaldehyde are treated with Grignard reagent to give _____.
 a) Primary alcohol b) Secondary alcohol
 c) Tertiary alcohol d) Both A and B
- 9) Acetic anhydrides are reacts with ethanol to give _____.
 a) Ethyl acetate b) Acetic acids
 c) Both A and B d) Aldehydes
- 10) 2,2-dichloropropane are hydrolysed in presence of NaOH to give _____.
 a) Ketones b) Aldehydes
 c) Alcohol d) Acids
- 11) Which of the following compound will not easily oxidized?
 a) 1° alcohol b) 2° alcohol
 c) 3° Alcohol d) Aldehydes

- 12) Hydroboration -oxidation of propylene to give _____.
 - a) Isopropyl alcohol
 - b) n-propyl alcohol
 - c) Isobutyl alcohol
 - d) tertiary butyl alcohol
- 13) The combustion of alkane produces _____.
 - a) $\text{HCl} + \text{H}_2\text{O}$
 - b) Alkyne
 - c) Alkene
 - d) $\text{CO}_2 + \text{H}_2\text{O}$
- 14) Acid chlorides reacts with nitrous acids to give _____.
 - a) Amide
 - b) Alkane
 - c) Acetone
 - d) Aldehydes
- 15) Alkyl halides almost insoluble in water because _____.
 - a) They have low polarity
 - b) They are covalent compound
 - c) They do not form hydrogen bond with water
 - d) None of above
- 16) Secondary alkyl halide may undergo nucleophile substitution by _____.
 - a) $\text{S}_\text{N}1$ reaction
 - b) $\text{S}_\text{N}2$ reaction
 - c) Both a and b
 - d) $\text{E}1$ reaction
- 17) When formaldehyde treated with 50% NaOH solution it undergoes _____.
 - a) Cannizzaro condensation
 - b) Wurtz reaction
 - c) Aldol condensation
 - d) Hydrolysis
- 18) Ethyl alcohol can react with conc. H_2SO_4 to give _____.
 - a) Ethylene
 - b) Diethyl ether
 - c) Ethyl hydrogen sulphate
 - d) All of these
- 19) 1,3-butadiene $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$ is called as _____.
 - a) Conjugated
 - b) Non conjugated
 - c) Cumulated
 - d) Isolated
- 20) Alkyl halides undergoes _____.
 - a) Electrophilic substitution reaction
 - b) Electrophilic Addition reaction
 - c) Nucleophilic substitution reaction
 - d) Nucleophilic Addition reaction

Q.2 Solve any Two**20**

- a) Write methods of preparation and How will you differentiate 1° , 2° & 3° Alcohol.
- b) Outline the general methods of preparations and Chemical reactions of aldehyde.
- c) Discuss in detail $\text{S}_\text{N}1$ reaction and compare the $\text{S}_\text{N}1$ and $\text{S}_\text{N}2$ reaction.

Q.3 Solve any Seven**35**

- a) What are the laboratory methods of preparation of alkenes?
- b) What is structural isomer? and classify its with suitable example.
- c) Write methods of preparation of alkanes.
- d) Define alkadienes and classify it with example
- e) Explain about acidity of carboxylic acid and effect of substitution on acidity
- f) Write a note on $\text{E}1$ reaction.
- g) Explain Diel-Alder Reaction and ozonolysis reaction.
- h) Write the structure and use of:
 - 1) Cetosteryl alcohol
 - 2) Glycerol
- i) How will you prepare alkyl halides?

- 13) The enzyme machinery for the de novo synthesis is located in _____.
a) Mitochondria b) Cytosol
c) Nucleus d) Peroxisomes
- 14) The total genetic information contained in a DNA is called as _____.
a) Gene b) Ribozyme
c) Genome d) Okazaki piece
- 15) Palmitic acid is synthesized from _____.
a) Acetyl CoA b) Acyl CoA
c) MalonylCoA d) None of above
- 16) Minimum number of bonds needed to answer biuret test _____.
a) 1 b) 3
c) 2 d) 4
- 17) Lenolenic and arachidonic acid are formed from _____.
a) Lenoleic acid b) Stearic acid
c) Palmitic acid d) None of above
- 18) Mutarotation refers to change in _____.
a) Optical rotation b) Temprature
c) Ph d) Chemical property
- 19) Direct oxidative pathway of glucose is _____.
a) HMP Shunt b) Glycoysis
c) Glycogenolysis d) Glycogenesis
- 20) Name the compound with greatest free energy _____.
a) Phosphoenolpyruvate b) Cyclic AMP
c) ATP d) Posphocreatinine

Q.2 Long Answers (Any Two)

20

- Explain in detail classification of phospholipids with structures.
- What are different methods of determination of amino acid sequence in proteins?
- Describe hexose monophosphate shunt & its significance.

Q.3 Short Answers (Any Seven)

35

- a) Define carbohydrates. Give detail classification.
- b) Describe Watson and Crick model of DNA structure.
- c) Add note on enzyme specificity.
- d) What are high energy compounds? Give suitable examples. Add note on redox potential.
- e) Explain the process of translation of mRNA.
- f) Explain in short Biuret test, Xantoprotic test and Sakaguchi test.
- g) Explain in detail respiration chain.
- h) Give structure & functions of mucopolysachharides.
- i) Explain the terms Acid value, Iodine value, Saponification value.

Seat No.	
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B. Pharmacy (Semester - II) (CBCS) Examination: Oct/Nov-2022
Pathophysiology

Day & Date: Wednesday, 19-04-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions. **20**

- 1) In Jaundice _____ level is elevated.

a) Bilirubin	b) Amylase
c) Creatinine	d) Uric acid
- 2) Most frequently affected joint in acute gouty arthritis in the beginning is _____.

a) Knee	b) Elbow
c) Shoulder	d) Great toe
- 3) Which of the following is feature of apoptosis _____

a) Chromatin condensation	b) Karyolysis
c) Cellular swelling	d) Hyperplasia
- 4) What is the most common cause of UTI?

a) E. coli.	b) S. aureus
c) Chlamydia	d) Mycoplasma
- 5) Which of the following disease is a STD?

a) Gonorrhea	b) Syphilis
c) AIDS	d) All of above
- 6) BCG shows most consistent protection against _____.

a) Tuberculosis	b) Leprosy
c) Typhoid	d) Malaria
- 7) Seizures can be caused by:

a) Brain injury that left scar tissue or other damage
b) Infection that left scar tissue in or caused other damage to the brain
c) Exposure to a toxic substance
d) All of the above
- 8) What is the alternate name of Leprosy?

a) Parkinson's disease	b) Hansen's disease
c) Cushing's disease	d) Hanford's disease
- 9) Which of the following is a symptom of Alzheimer disease?

a) Hyperactivity
b) Difficulty in remembering event of distance past
c) Disorientation
d) Hallucination
- 10) Which of the following features is NOT typical for Graves disease?

a) Hyperplasia of follicles
b) Irregular shaped follicle
c) Infiltration of mononuclear cells into retro-orbital connective tissue
d) Extensive infiltration of mononuclear cells into the thyroid parenchyma

- 11) Benign tumour is the one which
 - a) Differentiated and capsulated
 - b) Shows metastasis
 - c) Differentiated and non capsulated
 - d) Undifferentiated and non capsulated
- 12) Heart failure may be caused by _____.
 - a) Intrinsic pump failure
 - b) Increased work load on the heart
 - c) Both a and b
 - d) None of these
- 13) Seizers are characterized by _____.
 - a) Decreased level of glutamate
 - b) Increased the level of ach
 - c) Decreased level of GABA
 - d) Decreased level of dopamine
- 14) Which of the following is involved in pathogenesis of Rheumatoid Arthritis?
 - a) Rheumatoid factor
 - b) Cytokines
 - c) Adhesions molecule
 - d) All of the above
- 15) Hypertrophy of muscle is due to:
 - a) Increase in number of cells
 - b) Increase in size of cells
 - c) Decrease in number of cells
 - d) Abnormal shape of cells
- 16) Sick cell anemia is caused by replacement of glutamic acid in beta-globin chain of Hb by:
 - a) Arginine
 - b) Histidine
 - c) Valine
 - d) Leucine
- 17) IBD is inflammatory disorder of which part?
 - a) Liver
 - b) Spleen
 - c) Intestine
 - d) Lung
- 18) The accumulation of this substance in the body causes gout
 - a) Blood plasma
 - b) WBC
 - c) Uric Acid
 - d) Synovial fluid
- 19) Parkinson disease is marked by a lack of which chemical in the brain?
 - a) Serotonin
 - b) Dopamine
 - c) GABA
 - d) Norepinephrine
- 20) Epilepsy occurs when _____.
 - a) When neurons send abnormal electro-chemical signals to the brain causing a seizure
 - b) When the brain stops working altogether and a seizure starts
 - c) When someone has a mental health condition that causes seizures
 - d) When the brain is tired and overworked and it copes by having a seizure

Q.2 Answer the following questions (Any Seven)

35

- a) Give the Different types of Inflammation & Mechanism of Inflammation
- b) Write note on renal failure
- c) Write note on T.B.
- d) What is Alzheimer's disease? Describe its pathogenesis and manifestation
- e) Describe pathogenesis of AIDS.
- f) Explain causes and pathogenesis of bronchial asthma.
- g) Explain in detail pathogenesis of rheumatoid arthritis
- h) Explain in detail Diabetes mellitus.
- i) What is Anemia? Give its types & Explain in detail Iron deficient Anemia.

Q.3 Answer the following questions (Any Two)**20**

- a)** Define CHF, explain pathogenesis, etiology, clinical manifestation and management of CHF.
- b)** Give the Classification, etiology and pathogenesis of Cancer
- c)** Describe in detail of Peptic ulcer.

Seat
No.

B. Pharmacy (Semester - III) (CBCS) Examination: Oct/Nov-2022
Pharmaceutical Organic Chemistry II

Day & Date: Monday, 10-04-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.**20**

- 1) Which of the following compound have highest ring strain?
 - a) Cyclopropane
 - b) Cyclobutane
 - c) Cyclopentane
 - d) Cyclomethane
- 2) On sulphonation of naphthalene at 165°C. _____.
 - a) 1-Naphthalene sulfonic acid
 - b) 2-Naphthalene sulfonic acid
 - c) 3-Naphthalene sulfonic acid
 - d) 1 and 2-Naphthalene sulfonic acid
- 3) Amines can be prepared using ammonia and _____.
 - a) Alkyl halides
 - b) Acids
 - c) Esters
 - d) Nitriles
- 4) Aromatic compounds are _____.
 - a) Alkanes
 - b) Linear
 - c) nonconjugated and cyclic
 - d) conjugated and cyclic
- 5) Which of the following method is most suitable for the preparation of cyclopropane?
 - a) Dieckmann Condensation
 - b) Freund's method
 - c) Diels Alder reaction
 - d) None of the above
- 6) Which of the following substituents is not an ortho-para director?
 - a) CN
 - b) Br
 - c) Cl
 - d) I
- 7) How are the physical properties of phenol affected by the hydroxyl group?
 - a) Higher boiling points
 - b) increased solubility in polar solvent
 - c) Large intermolecular interaction
 - d) all of these
- 8) The complete hydrolysis of a nitrile gives _____.
 - a) An acid
 - b) an ester
 - c) an anhydride
 - d) an acid halide
- 9) The amino (NH₂) group in aniline is _____.
 - a) An activating substituent
 - b) a deactivating substituent
 - c) Neither an activating nor a deactivating substituent
 - d) a Meta directing substituents
- 10) The cyclohexane molecule is _____.
 - a) Flat
 - b) chair shaped
 - c) a five membered ring
 - d) acyclic

- 11) Kolbe reaction is characteristic reaction for
 - a) Carboxylic acids
 - b) Amines
 - c) Phenols
 - d) Alcohol
- 12) Nitriles can be prepared by?
 - a) The hydration of amines
 - b) The dehydration of acids
 - c) The dehydration of amides
 - d) The reduction of acids
- 13) All carbon atoms in anthracene are _____.
 - a) sp hybridized
 - b) sp^3 hybridized
 - c) sp^2 hybridized
 - d) none of these
- 14) Chloro group is _____.
 - a) Electron withdrawing by resonance effect
 - b) Electron withdrawing by inductive effect
 - c) Electron withdrawing by both inductive and resonance effect
 - d) Electron donating by both inductive and resonance effect
- 15) Toluene undergoes electrophilic aromatic substitution reaction to give _____.
 - a) Only para substituted product
 - b) Only ortho substituted product
 - c) Both para and ortho substituted product
 - d) Meta substituted product
- 16) Alcohols can be converted into carboxylic acids by _____.
 - a) Oxidation
 - b) Reduction
 - c) Hydrolysis
 - d) Elimination
- 17) Fats and oils are _____.
 - a) Esters
 - b) Amides
 - c) Carboxylic acids
 - d) Phenols
- 18) Which of the below fatty acid is example of unsaturated fatty acid?
 - a) Myristic acid
 - b) Oleic acid
 - c) Palmitic acid
 - d) Stearic acid
- 19) Cumene process is related to the preparation of _____.
 - a) Amines
 - b) Aldehydes
 - c) Carboxylic acids
 - d) Phenols
- 20) The intermediate in an electrophilic substitution reaction is _____.
 - a) an anion
 - b) a radical
 - c) an unpaired electron
 - d) a Carbocation

Q.2 Answer any seven of the following questions.

35

- a) Explain the physical and chemical properties of aromatic amines.
- b) Write the structures & uses of DDT and Saccharin.
- c) Elaborate on Friedal craft alkylation reaction of benzene with mechanism.
- d) Describe any one method to determine Reichert Meissl (RM) value with its significance.
- e) Define acid value. Give the principle involved in the determination of acid value (any one method)
- f) What are cyclo alkanes? How are they named according to IUPAC and Common system?
- g) Write the any two synthesis and reactions of phenanthrene.
- h) Write the structures & uses of BHC and Chloramine-T.
- i) Explain the physical and chemical properties of aromatic acids.

Q.3 Answer any two of the following questions.

20

- a)** Explain the reaction and Mechanism of Birch and Clemmensen's Reduction Reaction.
- b)** Explain the general mechanism of electrophilic aromatic substitution reaction of benzene along with nitration, sulphonation and halogenation as an example.
- c)** Enlist analytical constants of oils and fats. Discuss in detail about saponification value and iodine value and give their significance.

Seat No.	
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B. Pharmacy (Semester - III) (CBCS) Examination: Oct/Nov-2022
Physical Pharmaceutics - I

Day & Date: Wednesday, 12-04-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) _____ is not the type of Metal ion complexes.

a) Inorganic type	b) Chelates
c) Layer type	d) Olefins type
- 2) At CMC, light scattering _____ abruptly.

a) Decreases	b) Constant
c) Steady	d) Increases
- 3) Solubility can be expressed in terms of _____.

i) Percentage	ii) Poise
iii) Molarity	iv) Molality
a) Only i)	b) iii) and iv)
c) i), iii) and iv)	d) Only iii)
- 4) For _____ reactions, an increase in temperature increase the solubility.

a) Oxidation	b) Endothermic
c) Polymerization	d) Exothermic
- 5) Interaction of tetracycline and calcium to form water _____ complex.

a) Insoluble	b) Soluble
c) Miscible	d) None of these
- 6) Surfactant molecules which acts as solubilising agents have HLB value _____.

a) 30	b) 13
c) 20	d) 3
- 7) Crystalline substances exhibit _____ form.

a) Cubic	b) Tetragonal
c) Monoclinic	d) All of these
- 8) In the _____ State, the molecules are mobile in two direction and show about one axis.

a) Gases	b) Smectic
c) Nematic	d) None of these
- 9) The critical pressure of water is _____.

a) 78atm	b) 340atm
c) 218atm	d) 756atm
- 10) _____ is the force which acts between two immiscible liquid phases.

a) Interfacial tension	b) Contraction
c) Interface	d) Surface tension

- 11) Anionic surfactants are classified as _____.
a) Alkali Soaps b) Amine soaps
c) Metallic soaps d) All of these
- 12) Spreading occurs when work of adhesion is _____ than work of cohesion
a) Less b) More
c) Equal d) None of these
- 13) Surfactants contain polar and _____ Groups
a) Hydrophilic b) Hydrophobic
c) Nonpolar d) None of these
- 14) Macrogol esters are the example of _____ Surfactants.
a) Ionic b) Nonionic
c) Cationic d) Ampholytic
- 15) _____ is defined as the increases in mutual solubility of two partially miscible solvents by another agent.
a) Granulation b) Compaction
c) Blending d) Drying
- 16) _____ is defined as the heat which results in the change of matter without increasing the temperature.
a) Latent heat b) Cloud point
c) Freezing point d) None of these
- 17) Certain molecules exhibit _____ which lies between the liquid and crystalline state.
a) Amorphous b) Ternary
c) Phase rule d) Mesophase
- 18) Buffer Capacity is the maximum at _____.
a) $pK_a = pH$ b) $pK_a < pH$
c) $pK_a = \text{Concentration}$ d) $pK_a > pH$
- 19) In ideal solution, heat of solution is equal to _____.
a) Freezing b) Heat of evaporation
c) Heat of fusion d) None of these
- 20) _____ refers to the mutual solubilities of the components in liquid-liquid system.
a) Immiscibility b) Partial miscibility
c) Miscibility d) All of these

Q.2 Answer any seven of the following questions.

35

- a) Explain the method for determination of CST.
- b) Give the principle and working of Dunouy's tensiometer.
- c) Define isotonic solution. Explain adjustment of tonicity by any one method.
- d) Define complexation. Classify with example.
- e) Explain the sublimation critical point.
- f) Explain various ideal solubility parameters for solubility process.
- g) Define HLB and explain Griffin's scale.
- h) Write the pharmaceutical application of Buffers.
- i) What are the azeotropic mixtures? Explain with an example.

Q.3 Answer any two of the following questions.

- a)** Explain in detail Raoult's law and write its applications.
- b)** Explain Freundlich and Langmuir adsorption isotherm.
- c)** Discuss dielectric constant and dipole movement with their applications in pharmacy.

Seat No.	
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B. Pharmacy (Semester - III) (CBCS) Examination: Oct/Nov-2022
Pharmaceutical Microbiology

Day & Date: Saturday, 15-04-2023
Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) Microbes which grows in the absence of Oxygen called as
 - a) Aerobic
 - b) Microscopic
 - c) Anaerobic
 - d) None of the above
- 2) Decrease in pathogenicity is termed as
 - a) Attenuation
 - b) Tyndallization
 - c) Exaltation
 - d) Vaccination
- 3) Agar as a solidifying agent is first time used by
 - a) L. Pasteur
 - b) Fleming
 - c) R. Koch
 - d) E Jenner
- 4) The organs of locomotion in bacteria is called as
 - a) Flagella
 - b) Pilli
 - c) Pseudopods
 - d) Both a and b
- 5) Endospores are rich in
 - a) DPA + Ca
 - b) DPA + Mg
 - c) DPA + Cu
 - d) DPA + Fe
- 6) Electron microscope was first time developed by
 - a) Knoll and Ruska
 - b) GlalioiGlalie
 - c) L. Pasteur
 - d) Antony Van Leunhoek
- 7) About 80-90 % fungal cell wall is made up of
 - a) Cellulose
 - b) Cithin
 - c) Proteins
 - d) Lipids
- 8) Which of the following virus have complex symmetry
 - a) Influenza Virus
 - b) Pox Virus
 - c) Rabies Virus
 - d) HIV
- 9) Acid fast stain is also known as
 - a) Negative staining
 - b) AFB staining
 - c) Ziehl- Neelsen staining
 - d) Bot B and C
- 10) Best autoclaving is achieved at
 - a) 120°C for 15 min
 - b) 120° C for 1 hr
 - c) 110° C for 2 hr
 - d) 100° C for 3 hr
- 11) Sanitization is mostly used in
 - a) Hospitals
 - b) Food processing and catering
 - c) Research labarotaries
 - d) All of the above
- 12) DOP test is used for the validation of
 - a) HEPA filter
 - b) Membrane filter
 - c) Aseptic room
 - d) Autoclave

- 13) Test micro organism used for assay of Vitamin B12 is
 - a) Lactobacillus leichamanni
 - b) Lactobacillus Casei
 - c) Lactobacillus viridescens
 - d) Lactobacillus plantarum
- 14) *Staphylococcus aureus* is used for IP assay of
 - a) Bleomycine
 - b) Carbenicillin
 - c) Doxycycline
 - d) Kanamycine
- 15) Efficiency of HEPA filter is
 - a) 99.97%
 - b) 88.87%
 - c) 90.97%
 - d) 98.97%
- 16) Following microorganism is not used for preservative efficacy test.
 - a) Staphylococcus aureus
 - b) Bacillus substillis
 - c) Aspergillusniger
 - d) Candida albicans
- 17) Settle plate method is also known as
 - a) Spread plate method
 - b) Floatation method
 - c) Pour plate method
 - d) Sedimentation method
- 18) Sterilization by ionizing radiation is also known as
 - a) Cold Sterilization
 - b) Thermo Sterilization
 - c) Electro Sterilization
 - d) None of the above
- 19) The process of sterilization by intermittent heating for three successive days is known as
 - a) Inspissation
 - b) Tyndallization
 - c) Pasteurization
 - d) Incineration
- 20) The surface antigen present in Gram negative bacteria are called as
 - a) LPS
 - b) Teichoic acid
 - c) Lipoproteins
 - d) Glycoproteins

Q.2 Long Answers (Any Two)**20**

- a) Explain the principle, construction, and working of Autoclave.
- b) Write a detailed note on physical, chemical and biological indicators of sterilization.
- c) Give complete description on - Process of replication of virus

Q.3 Short Answers (Any Seven)**35**

- a) Explain different types and sources of microbial contamination of pharmaceuticals.
- b) Outline working of SEM and TEM
- c) Write a short note on growth curve of bacteria.
- d) Write applications of cell culture.
- e) Write a note on Keslsy- Sykes test.
- f) Describe assay of antibiotics by turbidimetric method.
- g) Classify bacteria according to its morphology.
- h) Classify fungi according to its morphology.
- i) Write contributions of Robert Koch

Seat No.	
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B. Pharmacy (Semester - III) (CBCS) Examination: Oct/Nov-2022
Pharmaceutical Engineering

Day & Date: Tuesday, 18-04-2023
 Time: 10:00 AM To 01:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) The working of Fluid energy mill is based on principle of
 - a) Impact
 - b) Attrition
 - c) Cutting
 - d) Both a & b
- 2) In the fractionating column of fraction distillation, as we go higher in the column the _____.
 - a) Temperature becomes lower
 - b) Temperature becomes higher
 - c) minimum absorption occurs
 - d) Sublimation risk increases
- 3) Lyophilization is also known as:
 - a) Drying by sublimation
 - b) Freeze drying
 - c) Both a & b
 - d) None
- 4) Unit of the rate of heat transfer is
 - a) Joule
 - b) Newton
 - c) Pascal
 - d) Watt
- 5) Mechanism of mixing in silverson mixer is:
 - a) Connective
 - b) Laminar
 - c) Random
 - d) Turbulent
- 6) Which of the following is used for drying blood plasma:
 - a) Spray drying
 - b) Freeze drying
 - c) Vacuum Drying
 - d) Fluid Bed drying
- 7) Rectification is another name of:
 - a) Fractional distillation
 - b) Molecular distillation
 - c) Simple distillation
 - d) Destructive distillation
- 8) Which is used as a plating to protect steel?
 - a) Asbestos
 - b) Chromium
 - c) Glass
 - d) Rubber
- 9) Which of the following factor does NOT affect the size reduction
 - a) Hardness
 - b) Stickiness
 - c) Viscosity
 - d) Abrasiveness
- 10) Stefan Boltzmann law is applicable for heat transfer by
 - a) Conduction
 - b) Convection
 - c) Radiation
 - d) Conduction & Radiation combined
- 11) Calandria consists of no. of
 - a) Baffles
 - b) Jacket
 - c) Tubular surfaces
 - d) None of these

- 12) A powder, all the particles of which pass through sieve no. 44 is called?
 - a) Coarse powder
 - b) Moderately fine powder
 - c) Fine powder
 - d) Very fine powder
- 13) Entrainment separator is part of which evaporator?
 - a) Climbing Film Evaporator
 - b) Triple effect evaporator
 - c) Horizontal Tube Evaporator
 - d) Evaporating Pan
- 14) Dry spots are formed during one of the following period?
 - a) Constant Rate period
 - b) First Falling period
 - c) Initial Adjustment period
 - d) Second falling period
- 15) Who has proposed that the filtration process is similar to the streamline flow of a liquid under pressure through capillaries?
 - a) Carman
 - b) Darcy
 - c) Kozeny
 - d) Poiseuilli
- 16) One of the following glass containers is used for the storage of light sensitive pharmaceuticals.
 - a) Air-Tight
 - b) Amber Colored
 - c) Unit Dose
 - d) Well closed
- 17) In Cyclone separator, the separation depends on:
 - a) Size & Shape
 - b) Shape and Surface area
 - c) Size & Density
 - d) Surface texture & Size
- 18) Corrosion of metals is fairly high in one of the following medium:
 - a) Acidic
 - b) Alkaline
 - c) Neutral
 - d) Non-Aqueous
- 19) In which process, concentrated liquid remains as final product?
 - a) Distillation
 - b) Evaporation
 - c) Crystallization
 - d) Drying
- 20) Which one of the following type is continuous type centrifuge
 - a) Super centrifuge
 - b) perforated basket centrifuge
 - c) non perforated basket centrifuge
 - d) None of the above

Q.2 Long Answers (Any Two)**20**

- a) What is corrosion? Describe types of corrosion.
- b) Write different factors affecting on pharmaceutical plant construction.
- c) Describe construction and working of belt conveyor with diagram

Q.3 Short Answers (Any Seven)**35**

- a) Write the Bernoulli's equation and explain the symbols there in.
- b) Describe Hammer mill with diagram.
- c) Write application of size separation.
- d) Define- Conduction, convection, radiation and blackbody.
- e) Draw a well labeled diagram of MEE.
- f) Explain working of Flash distillation with diagram.
- g) Explain construction of FBD with diagram.
- h) Write construction and working of Rotary Drum filter.
- i) Write construction and working of double cone blender.

**Seat
No.**

Day & Date: Monday, 10-04-2023
Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- 1) Electrophillic Substitution in furan usually occurs at _____.
a) C 3 atom b) C 2 atom
c) Both C2 and C3 d) None of the above
- 2) Thiophene shows electrophillic Substitution reaction mainly at _____.
a) β position b) α position
c) γ (Gamma) position d) None of the above
- 3) Five membered saturated heterocycles name ends with the suffix _____.
a) - ine b) - ole
c) - Icine d) -olane
- 4) The complete saturated form of pyrrole is known as _____.
a) Pyrroline b) Dihydropyrrole
c) Pyrrolidine d) None of the Above
- 5) The relative order of reactivity of heterocycles with respect to the benzene is _____.
a) Pyrrole> thiophene> Furan> benzene
b) Pyrrole> furan> thiophene > benzene
c) Furan>thiophene>pyrrole> benzene
d) Furan> pyrrole> thiophene > benzene
- 6) Molecular formula for imidazole is _____.
a) C₃H₃N b) C₃H₃N₂
c) C₃H₄N₂ d) C₃H₂N₂
- 7) Dakin reaction is useful for synthesis of _____.
a) Alcohols b) Phenols
c) Aldehydes d) Carboxylic acids
- 8) The oxidation of alcohols to ketone in presence of base, tertiary butoxideis known as
a) Schmidt rearrangement b) Oppenauer oxidation
c) Clenunensen reduction d) Birch reduction
- 9) Beckmann rearrangement is used for synthesis of _____.
a) Amide b) Alcohols
c) Phenols d) Oximes
- 10) n-butane can exist in only confirmation
a) 4 b) 5
c) 6 d) 7
- 11) Angle strain is maximum in _____.
a) Clclopropane b) Cyclobutane
c) Cyclopentane d) cyclohexane

- 12) Racemic mixture can be separated by _____.
 a) Mechanical separation b) Biochemical Method
 c) Chemical method d) All of above
- 13) Specific rotation is denoted by _____.
 a) R b) S
 c) D d) $[\alpha]$
- 14) Which of the following confirmation has highest stability?
 a) Gauche b) Fully eclipsed
 c) Staggered d) Partially eclipsed
- 15) Stereoisomer which are not mirror images of each other are called _____.
 a) Enantiomers b) Diastereomers
 c) Racemic mixture d) Meso compound
- 16) Cis and Trans isomers are _____.
 a) Diastereomers b) Enantiomers
 c) Stereoisomers d) All of above
- 17) If a molecule has no element of symmetry it is said to be _____.
 a) Asymmetric b) Symmetric
 c) Meso compound d) None of above
- 18) Optically active molecule which rotate plane polarized light in anticlockwise direction is _____.
 a) Levorotatory b) R.Configuration
 c) Dextrorotatory d) S.Configuration
- 19) Nitration of pyrrole at 278 k gives _____.
 a) 3-nitropyrrole b) 2-nitropyrrole
 c) 4-nitropyrrole d) None of these
- 20) Electrophillic Substitution reaction occurs in quinolone at _____.
 a) Position 2 and 4 b) Position 3 and 5
 c) Position 5 and 8 d) Position 4 and 6

Q.2 Answer any seven of the following questions.**35**

- a) Define and classify Isomerism, Give suitable examples.
- b) Write any two methods of preparation for Thiophen & Furan.
- c) Elaborate on method of preparations of Isoquinoline
- d) Write on different conformers of cyclohexane.
- e) Write any two methods of synthesis of Pyrazole. Write any three reactions of it.
- f) Elaborate on Clemmensen's reduction reaction.
- g) Write methods of synthesis of Purine. Write reactions of it.
- h) Write IUPAC nomenclature of heterocyclic compounds with suitable examples
- i) Write any two methods of synthesis of Oxazole. Write any three reactions of it.

Q.3 Answer any two of the following questions.**20**

- a) Write on synthesis, reactions & medicinal uses of Imidazole.
- b) Discuss with suitable examples R&S, + E&Z and D&L system of nomenclature of optical isomers.
- c) Elaborate with mechanism of reaction on Beckmann & Oppenauer oxidation rearrangement.

Day & Date: Wednesday, 12-04-2023
Time: 02:00 PM To 05:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- Page 1 of 2

- 12) Atropine shows activity with binding _____ receptor.
 - a) Muscarinic
 - b) Cholinergic
 - c) Nicotinic
 - d) none of these
- 13) Benzodiazepines shows activity binding with _____ receptor.
 - a) GABA
 - b) Alpha
 - c) Beta
 - d) none of these
- 14) _____ Atom provides potency to halothane.
 - a) Cl
 - b) Br
 - c) I
 - d) F
- 15) Thiopental belongs to _____ class.
 - a) Ultra short acting barbiturate
 - b) Long acting barbiturate
 - c) Intermediate acting barbiturate
 - d) None of these
- 16) Choose the correct starting material use in synthesis of phenytoin
 - a) Benzil
 - b) Benzene
 - c) Acetone
 - d) Alcohol
- 17) In barbiturates substitution of one imide hydrogen by alkyl group increases _____.
 - a) Lipid solubility
 - b) Water Solubility
 - c) Alcohol
 - d) None of these
- 18) Phenothiazine are used as _____ Purpose.
 - a) Antipsychotic
 - b) Sedatives
 - c) Hypnotics
 - d) None of these
- 19) Phenobarbotone shows action by blocking _____ channel.
 - a) Calcium
 - b) Copper
 - c) Bicarbonate
 - d) chlorine
- 20) _____ is used as starting material for synthesis of Halothane.
 - a) Trichloroethylene
 - b) Trichloromethylene
 - c) Chloroacetone
 - d) Bromoacetone

Q.2 Answer any seven of the following questions.

35

- a) Explain SAR of Morphine analogues.
- b) What are MOA and Uses of Anti-inflammatory agents?
- c) Explain MOA and uses of General anesthetics with any two examples.
- d) Write SAR and uses of Phenothiazines.
- e) Classify Sedatives and Hypnotics. Give SAR of Benzodiazepines
- f) Explain SAR and MOA of Cholinergic blocking agents.
- g) Describe is biosynthesis and catabolism of acetylcholine.
- h) Outline synthesis of halothane & phenytoin
- i) Classify Adrenergic Antagonist agents. Give MOA and uses of it.

Q.3 Answer any two of the following questions.

20

- a) Discuss the process of biosynthesis and catabolism of catecholamine.
- b) Explain SAR and MOA of Sympathomimetic agents along with appropriate example.
- c) Outline synthesis of Salbutamol and Carbachol. Give SAR and MOA of Anticonvulsant agents

Day & Date: Saturday, 15-04-2023
Time: 02:00 PM To 05:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

20

- Page 1 of 2

- 12) Tyndall effect discovered by _____.
a) Zsigmondy b) Newton
c) Farady d) Rutherford
- 13) _____ is an example of capillary viscometer
a) Ostwald b) Canon-flanske
c) Ubbelohde d) All of these
- 14) The term micromeritics was given to the science and technology of small particles by _____.
a) Archimedes b) Newton
c) Dalia valle d) Peri cury
- 15) _____ is not the fundamental property of powder.
a) Particle shape b) Particle volume
c) Bulk density d) Particle number
- 16) _____ is defined as the number of particle per unit weight of a powder.
a) Particle weight b) Particle frequency
c) Particle number d) All
- 17) Thixotropy of plastic system shows _____ transformation.
a) Gel-sol-gel b) Gel-gel-gel
c) Sol-gel-sol d) Sol-sol-gel
- 18) A wetting agent is included in the formulation of a suspension, particularly when the suspended particles:
a) Are hydrophobic
b) are more denser than the vehicle
c) Are water soluble
d) have lesser interfacial tension
- 19) The size of dispersed particles in coarse dispersion ranges from
a) 1 μm to 100 μm b) 1 nm to 100nm
c) 1mm to 100cm d) Less than 1μm
- 20) Hausner Ratio is _____.
a) Tapped density/ Bulk density b) Bulk density/ Tapped density
c) bulk volume/void volume d) void volume/ bulk volume

Q.2 Answer any seven of the following questions.

35

- a) Explain the mechanism of thixotropy with examples
- b) Explain kinetic properties of colloids
- c) Explain Plastic and dilatant flow of liquids.
- d) Explain the principle of cup & bob viscometer.
- e) Explain the formulation of emulsion by HLB method.
- f) What are derived properties of powders? Explain any two.
- g) Enumerate different methods of determination of true density and explain any one
- h) Explain the factors influencing the rate of a reaction.
- i) Explain physical degradation of pharmaceuticals and its preventive measures.

Q.3 Answer any two of the following questions.

20

- Define and explain Non Newtonian flow of liquids
- Discuss the electrical properties and kinetic properties of colloids
- Define Zero order reaction with suitable examples. Explain equation for the determination of rate constant, half-life and shelf life for zero order reaction kinetics

Seat No.	
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B. Pharmacy (Semester - IV) (CBCS) Examination: Oct/Nov-2022
Pharmacology - I

Day & Date: Tuesday, 18-04-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.

20

- 1) Disulfiram inhibits _____ enzyme.

a) Alcohol dehydrogenase	b) Aldehyde dehydrogenase
c) Acetaldehyde dehydrogenase	d) All of the above
- 2) _____ is a sudden, uncontrolled electrical disturbances in the brain.

a) Impulse	b) Shock
c) Seizure	d) Anomaly
- 3) _____ calms firing nerves in the central nervous system.

a) Adrenaline	b) Serotonin
c) Endorphin	d) GABA
- 4) _____ is a selective serotonin reuptake inhibitor.

a) Bupropion	b) Sertraline
c) Desipramine	d) Duloxetine
- 5) Identify NMDA receptor antagonist?

a) Selegiline	b) Entacapone
c) Amantadine	d) Levodopa
- 6) Which of the following drug is used in the treatment of Alzheimer's disease?

a) Galantamine	b) Bromocriptine
c) Amphetamine	d) Amantadine
- 7) Identify the respiratory stimulant drug?

a) Cocaine	b) Strychnine
c) Amphetamine	d) Caffeine
- 8) _____ assigned by United States adopted council.

a) Chemical name	b) Proprietary name
c) Nonproprietary name	d) None of the above
- 9) _____ is a Monoamino Oxidase Inhibitor-B

a) Iproniazid	b) Iproclozide
c) Moclobemide	d) Selegiline
- 10) _____ blocks excitatory glutamate responses.

a) Phenobarbital	b) Phenytoin
c) Carbamazepine	d) Vigabatrin
- 11) Muscarinic receptors are belonging to _____.

a) Ion channel receptor	b) Enzyme linked receptor
c) G-protein coupled receptor	d) Intracellular receptor

- 12) Half-life is doesn't depend on _____.
 - a) Time of drug absorption
 - b) Biotransformation
 - c) Concentration of a drug in plasma
 - d) Rate of drug elimination
- 13) _____ is a long-acting neuromuscular blocking agent.
 - a) Mivacurium
 - b) Carbachol
 - c) Rapacuronium
 - d) Tubocurarine
- 14) _____ is an α_2 selective antagonist.
 - a) Yohimbine
 - b) Tolazoline
 - c) Prazosin
 - d) Reserpine
- 15) Ephedrine causes _____.
 - a) Hypotension
 - b) Bradycardia
 - c) Mitosis
 - d) Bronchodilation
- 16) Irreversible interaction of an antagonist with a receptor is due to _____.
 - a) Ionic bond
 - b) Covalent bond
 - c) Hydrogen bond
 - d) Van der waals forces
- 17) _____ is used in the long term therapy of myasthenia gravis.
 - a) Carbachol
 - b) Pilocarpine
 - c) Neostigmine
 - d) Physostigmine
- 18) _____ is a reversible nonselective α and β antagonist.
 - a) Propranolol
 - b) Labetalol
 - c) Metoprolol
 - d) Phentolamine
- 19) Which stage of sleep is responsible for the incidence of dreams?
 - a) Stage 2 NREM sleep
 - b) Slow wave sleep
 - c) REM sleep
 - d) All of the above
- 20) _____ opioid receptor is responsible for euphoria and respiratory depression.
 - a) Kappa
 - b) Delta
 - c) Mu
 - d) All of the above

Q.2 Answer the following questions (Any Seven)**35**

- a) Give an exhaustive account on Dale's vasomotor reversal phenomenon.
- b) Write a note on the nature and sources of drugs.
- c) Define general anaesthesia, discuss the stages of general anaesthesia.
- d) Classify antidepressant drugs, write pharmacological actions of chlorpromazine.
- e) Write advantages and disadvantages of oral and parenteral route of administration.
- f) Classify sedative and hypnotic drugs and write a note on barbiturate.
- g) Describe the pharmacology of disulfiram.
- h) Write pharmacological actions of acetylcholine.
- i) Define the terms- Partial agonist, idiosyncrasy, adverse drug reaction, local anaesthesia, drug tolerance

Q.3 Answer the following questions (Any Two)**20**

- a) Describe the metabolism and distribution process of drugs.
- b) Define receptor, write general structure and general mechanism of G-protein coupled receptor
- c) Classify antiparkinson's agents and write the pharmacology of levodopa-carbidopa

Seat No.	
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Set **P**

B. Pharmacy (Semester - IV) (CBCS) Examination: Oct/Nov-2022
Pharmacognosy and Phytochemistry – I

Day & Date: Thursday, 20-04-2023
 Time: 02:00 PM To 05:00 PM

Max. Marks: 75

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Multiple Choice questions.**20**

- 1) Identify the crude drug as antitussive.

a) Opium	b) Vasaka
c) Cannabis	d) Clove
- 2) Identify qualitative chemical test used for detection of cardiac glycosides.

a) Shinoda Test	b) Salkowski Test
c) Molisch Test	d) Mayer's Test
- 3) Unorganized crude drugs are identified by _____ method.

a) Morphological	b) Organoleptic
c) Chemical	d) All of these
- 4) Removal of sand, dirt, animal excreta from the crude drug are called as _____.

a) Sprinkling	b) Polishing
c) Gardening	d) FOM
- 5) _____ system classifies crude drugs on the basis of biological activity.

a) Biological	b) Morphological
c) Pharmacological	d) Binomial
- 6) Identification of Curcumin by HPTLC is _____ method of evaluation.

a) Microscopical	b) Biological
c) Chemical	d) Physical
- 7) Two equal bean shaped cells found in stomata are known as _____.

a) Epidermal Cells	b) Glandular Cells
c) Aerenchyma Cells	d) Guard Cells
- 8) Hot aqueous solution of _____ is acidic in nature.

a) Agar	b) Honey
c) Acacia	d) Starch
- 9) Identify the primary nutrients useful for the normal growth of medicinal plants.

a) Ca, Mg & S	b) N, P & K
c) Zn & Co	d) Zn & Fe
- 10) _____ Hybridization involves crosses between the medicinal plants of similar variety of different species.

a) Intravarietal	b) Intrageneric
c) Intervarietal	d) Intergeneric
- 11) Who is regarded as First Pharmacist of the World?

a) Robert Koch	b) Galen
c) Hippocrates	d) Theophrastus

- 12) *Hydnocarpus oil* is also known as _____.
a) Chaulmoogra oil b) Ricinus oil
c) Olive oil d) Coconut oil
- 13) Vatta is a one of the dosha in which _____ combination observed.
a) Air and Fire b) Air and Space
c) Air and Water d) Air and Earth
- 14) Ninhydrine reagent is used to identify _____.
a) Starch b) Volatile oil
c) Amino acid d) Calcium oxalate
- 15) Select the drug packed in Kerosene tin container.
a) Benzoin b) Asafetida
c) Tolu balsam d) Colophony
- 16) Identify the crude drug obtained from red algae.
a) Agar b) Indian gum
c) Tragacanth d) Pectin
- 17) Total soluble constituent of the crude ding in a particular solvent is called as _____ value.
a) Marc b) Extractive
c) Saponification d) Acid
- 18) Oxidase & Peroxidase are present in _____.
a) Papain b) Bromelain
c) Acacia d) Beeswax
- 19) Identify the parameter useful to confirm the mucilage content present in the crude drug?
a) Foaming index b) Refractive index
c) Calibration factor d) Swelling factor
- 20) _____ is harvested by long handle fork.
a) Algae b) Fruits
c) Rhizome d) Seeds

Q.2 Answers the following questions (Any Two)

20

- Discuss various stages involved in the processing of DONO.
- Write various systems of classification of Drugs of Natural Origin along with examples. Describe their merits and demerits of all the classes.
- Describe alternative system of medicine practiced in India

Q.3 Answers the following questions (Any Seven)

35

- a) Write the modern scope of Pharmacognosy.
- b) Write a note on natural allergens and hallucinogens.
- c) Write a note quantitative microscopic method of evaluation.
- d) Explain callus culture with its applications.
- e) Brief note on aseptic method of propagation.
- f) Write a note on any two natural enzymes having medicinal importance.
- g) Write source, method of preparation, chemical constituents and uses of Beeswax.
- h) Define Glycosides. Classify with suitable examples.
- i) Write a note on novel medicinal agents from marine source.

Seat No.		Marks Obtained		Signature of Examiner		Signature of Junior Supervisor	
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B. Pharmacy (Semester-II) Examination, Oct/Nov 2022
Democracy, Election and Good Governance

Day & Date: Friday, 21-04-2023

Max. Marks: 50

Time: 11:00 AM to 01:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Answer

Q.1 Choose the correct option and rewrite the sentence.

- 1) _____ is necessary for good governance?
a) Privatization
b) Centralization
c) Public Participation
d) Riot Control Police
- 2) 74th Constitutional amendment gave Constitution status to Urban Local self-governing bodies in _____.
a) 1994
b) 1993
c) 1992
d) 1991
- 3) In the Local governments of India, one-third of the seats are reserved for _____.
a) Women
b) Fisher Folks
c) Migrated Workers
d) Construction Workers
- 4) How many fundamental rights are included in the Indian Constitution?
a) One
b) Six
c) Twelve
d) Ten
- 5) _____ is the present chief Election Commissioner of India.
a) Rajiv Kumar
b) Sunil Arora
c) Sushil Chandra
d) None of these
- 6) Lok Sabha has _____ members which are directly elected by the people.
a) 555
b) 543
c) 250
d) 288
- 7) There are _____ elected members in Maharashtra Vidhansabha.
a) 388
b) 200
c) 288
d) 100
- 8) There are _____ tiers of Indian government.
a) Four
b) Three
c) Two
d) Five
- 9) The principle of accountability and transparency are related to the _____.
a) Bad governance
b) Old governance
c) Monocracy
d) Good governance
- 10) Casual workers Fisher folks, Construction Labourers are considered as _____ sections in India.
a) Marginalized
b) Advanced
c) Ruling
d) None of these

- 11) In representative democracy the process of _____ links the government and the people.
 - a) Corruption
 - b) Dictatorship
 - c) Economics
 - d) Election
 - 12) _____ is miniature of the parliament of India at the grassroots level.
 - a) Loksabha
 - b) Vidhanparishad
 - c) Gramsabha
 - d) Rajysabha
 - 13) The term of Loksabha is _____.
 - a) 5 years
 - b) 2 years
 - c) 6 years
 - d) 4 years
 - 14) The Right to Information was passed in India in the year _____.
 - a) 1950
 - b) 1962
 - c) 2020
 - d) 2005
 - 15) Balwantrai Mehta and Ashok Mehta Committee are related to _____ in India.
 - a) G.S.T.
 - b) Panchayati Raj Institutions
 - c) State Governments
 - d) Parliament
 - 16) How many seats are reserved for woman in Local self-government of Maharashtra?
 - a) 33%
 - b) 25%
 - c) 70%
 - d) 50%
 - 17) _____ is the example of rural Local self-government.
 - a) Zilla Parishad
 - b) Panchayat Samiti
 - c) Village Panchayat
 - d) All of these
 - 18) The word democracy is derived from the Greek words. Demos and Kratos the meaning of Demos is _____ and Kratos means _____.
 - a) God and Saints
 - b) People and Rule
 - c) Animal and God
 - d) None of these
 - 19) Dr. Babasaheb Ambedkar strongly advocated _____ democracy.
 - a) Social
 - b) Modern
 - c) Direct
 - d) Ancient
 - 20) In democracy all issues in legislature, cabinet, executive, and other committees are resolved through the Principle of _____.
 - a) Minority rule
 - b) Leadership
 - c) Dictatorship
 - d) Majority rule
 - 21) Criminalization of politics is the basic _____ before the democracy in India.
 - a) Need
 - b) Qualification
 - c) Challenge
 - d) Boon
 - 22) Indian voters directly elect the members of _____.
 - a) Rajysabha
 - b) Loksabha
 - c) Vidhanparishad
 - d) Election Commission

- 23) The 73rd and 74th Constitutional amendments are related to the _____ government.
- | | | |
|------------|-------------|--------------------------|
| a) Central | b) National | <input type="checkbox"/> |
| c) State | d) Local | |
- 24) Public Accountability means the representative must remain _____ to the people.
- | | | |
|---------------|------------------|--------------------------|
| a) Opposite | b) Irresponsible | <input type="checkbox"/> |
| c) Answerable | d) All of these | |
- 25) A system of welfare and redistribution aimed to narrow social inequalities is called _____.
- | | | |
|----------------|----------------|--------------------------|
| a) Democracy | b) Bureaucracy | <input type="checkbox"/> |
| c) Aristocracy | d) Technocracy | |
- 26) According to _____ Democracy is government of the people, by the people and for the people.
- | | | |
|--------------------|------------------|--------------------------|
| a) Abraham Lincoln | b) Donald Trump | <input type="checkbox"/> |
| c) John Wood | d) None of these | |
- 27) Where is the supreme court?
- | | | |
|--------------|-------------|--------------------------|
| a) Mumbai | b) Chennai | <input type="checkbox"/> |
| c) New Delhi | d) Calcutta | |
- 28) Election Commission do _____ functions.
- | | | |
|--------------------------|-------------------------|--------------------------|
| a) Making list of voters | b) Cancellation of poll | <input type="checkbox"/> |
| c) Conduct of the poll | d) All of the above | |
- 29) Financial year ends in India on _____.
- | | | |
|----------------|-------------|--------------------------|
| a) 28 February | b) 31 March | <input type="checkbox"/> |
| c) 30 April | d) 31 May | |
- 30) Which one of the following is the fundamental right in Indian Constitution?
- | | | |
|-----------------------|----------------------|--------------------------|
| a) Right to Education | b) Right to Property | <input type="checkbox"/> |
| c) Right to Strike | d) Right to Revolt | |
- 31) Social democracy aims to promote _____
- | | | |
|----------------|-------------------|--------------------------|
| a) Rich people | b) Bureaucracy | <input type="checkbox"/> |
| c) Educated | d) Social justice | |
- 32) In which Article Directive Principle of state policy appeared?
- | | | |
|-------------|-------------|--------------------------|
| a) 1 to 4 | b) 36 to 51 | <input type="checkbox"/> |
| c) 12 to 35 | d) 5 to 11 | |
- 33) The Prime Minister is the _____ executive?
- | | | |
|-------------------|---------------|--------------------------|
| a) Constitutional | b) Hereditary | <input type="checkbox"/> |
| c) Nominal | d) Real | |
- 34) Election is declared by _____.
- | | | |
|------------------------|-------------------|--------------------------|
| a) President | b) Prime Minister | <input type="checkbox"/> |
| c) Election Commission | d) None of these | |
- 35) In Democratic form of government, the ultimate authority rests with _____.
- | | | |
|--------------|-----------------------------|--------------------------|
| a) People | b) King | <input type="checkbox"/> |
| c) Community | d) Administrative officers. | |

- 36) The concept of direct democracy is related with country at present.
 a) India b) France
 c) England d) Switzerland ☐
- 37) Nation is a _____ Concept.
 a) Political b) Territorial
 c) Emotional d) None of these ☐
- 38) _____ type of Election Commission in India.
 a) Five years b) Permanent
 c) Temporary d) None of the above ☐
- 39) Who was the Chairman of the Drafting Committee of the Constitution?
 a) Rajendra Prasad b) Dr. Babasaheb Ambedkar
 c) B. N. Rao d) None of these ☐
- 40) Fundamental Duties are included in _____.
 a) Article - 61 b) Article - 14 to 18
 c) Article - 19 to 22 d) Article - 51 - A ☐
- 41) What is the full form of M-governance?
 a) Machine governance b) Money governance
 c) Marketing governance d) Mobile governance ☐
- 42) Who appoints the chief Election Commissioner?
 a) Parliament b) President of India
 c) Prime Minister d) Law Minister ☐
- 43) Who was the first Woman become a Chief Election Commissioner of India?
 a) V.S. Ramdevi b) G.D. Das
 c) S.K. Bedi d) R.M. Nikam ☐
- 44) Freedom, Equality and Fraternity are the core value of _____ democracy.
 a) Old b) Social
 c) Greek d) Foreign ☐
- 45) Indirect Democracy is also called as _____ democracy?
 a) Representative b) Bad
 c) Negative d) Positive ☐
- 46) Which among the following is not the principle of democracy?
 a) Public Accountability b) Government by Consent
 c) Dictatorship d) Rule of Law ☐
- 47) How many fundamental rights are included in the Indian Constitution?
 a) Two b) Six
 c) Ten d) Twelve ☐
- 48) _____ age is needed to elect the election of Grampanchayat.
 a) 25 b) 18
 c) 21 d) 30 ☐
- 49) _____ said the 'Democracy is a way of Life.'
 a) Mahatma Gandhi b) Pandit Nehru
 c) R.G. Getel d) J.S. Mill ☐
- 50) _____ districts in Maharashtra has Zilla Parishadas.
 a) 36 b) 33
 c) 22 d) 18 ☐

Set	P
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100	1

प्र.2 खालीलपैकी प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही चार)

- अ) पर्यावरण अभ्यासाची व्याप्ती
- ब) सागरी परिसंस्था
- क) जंगलतोडीची कारणे
- ड) जैवविविधता संवर्धन
- इ) हवेच्या प्रदूषणाची कारणे
- ई) जलप्रदूषण प्रतिबंध व नियंत्रण कायदा

प्र.3 टीपा लिहा. (कोणतेही दोन)

08

- अ) पर्यावरण अभ्यासाचे महत्त्व
- ब) चिपको आंदोलन
- क) जल प्रदूषणाचे परिणाम

प्र.4 खालीलपैकी प्रश्नांची उत्तरे लिहा. (कोणतेही दोन)

08

- अ) भारत हे एक विशाल जैवविविधता असलेला प्रदेश आहे स्पष्ट करा.
- ब) परिसंस्थेची रचना व कार्य स्पष्ट करा.
- क) पर्यावरण अभ्यास म्हणजे काय सांगून स्वरूप स्पष्ट करा.

प्र.5 दीर्घोत्तरी प्रश्न (कोणतेही एक)

08

- अ) ध्वनी प्रदूषणाची कारणे व परिणाम स्पष्ट करा.
- ब) वन्यजीव संरक्षण कायदा सविस्तरपणे स्पष्ट करा.

Seat No.	
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Set **P**

B. Pharmacy (Semester - II) (CBCS) Examination: Oct/Nov-2022
Environmental Science

Day & Date: Friday, 21-04-2023
 Time: 03:00 PM To 05:30 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options. **08**

- 1) The word 'Environment' is derived from _____ language.
 - a) French
 - b) Roman
 - c) Latin
 - d) Greek
- 2) Conflict of _____ was done in Uttar Pradesh.
 - a) Tehari Dam
 - b) Chipko movement
 - c) Ocean protection
 - d) Air pollution
- 3) _____ is not considered as renewable energy resource.
 - a) Solar energy
 - b) Hydroelectric energy
 - c) Oceanic energy
 - d) Petroleum
- 4) Kalhatri is an example of _____ ecosystem
 - a) Forest
 - b) Marine
 - c) Desert
 - d) Grassland
- 5) The term environment means _____.
 - a) Area
 - b) Land
 - c) Surrounding Area
 - d) Region
- 6) The term "Ecosystem" was first introduced by _____.
 - a) R. Carson
 - b) Arthur Tansley
 - c) E. P. Odum
 - d) A. Chads
- 7) In India Forest Conservation Act was passed in year _____.
 - a) 1980
 - b) 1982
 - c) 1984
 - d) 1986
- 8) Conservation of biodiversity in their natural habits is called _____.
 - a) Ex-situ conservation
 - b) In-situ conservation
 - c) Protection
 - d) Conservation

Q.2 Write short answers (Any Four) **08**

- a) Scope of Environmental Studies
- b) Marine Ecosystem
- c) Causes of Deforestation
- d) Conservation of Biodiversity
- e) Causes of Air Pollution
- f) Water pollution (Prevention and Control) Act

Q.3 Write short notes (Any Two) **08**

- a) Importance of Environmental Studies
- b) Chipko Movement
- c) Effects of Water Pollution

Q.4 Broad Answers Questions (Any Two)

- a) Explain the India as a Mega biodiversity Region
- b) Explain the structure and function of Ecosystem.
- c) Define environmental studies and explain the nature of environmental studies.

Q.5 Broad Answers Question (Any One)**08**

- a) Explain the causes and effects of Noise pollution.
- b) Explain in details the Wildlife Protection Act