SLR-G – 1

Seat No.	

B. Pharmacy (Semester – I) (New CBCS Pattern) Examination, 2016
PHARMACEUTICS – I

Day and Date : Tuesday, 29-11-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

I. Multiple choice questions : **(1×15=15)**

1) Drug Inquiry Committee was appointed by Govt. of India under the Chairmanship of
   A) T.K. Gajjar B) M.L. Sheriff
   C) R.N. Chopra D) None of these

2) B.P. 2015 comprises _____ volumes.
   A) 4 B) 6 C) 5 D) 3

3) To improve flow property _____ is used.
   A) glident B) filler C) binder D) none of these

4) Ototoxicity can occur when _____ preservative is applied to the ear.
   A) Thiomersal B) Methyl paraben
   C) Sodium Benzoate D) Benzalkonium chloride

5) _____ performulation parameter measure of a molecule's Lipophilicity.
   A) Partition coefficient B) Hygroscopicity
   C) Angle of repose D) Both A and B

6) For weak bases, a decrease in pH results in a/an _____ of solubility.
   A) equal B) decrease C) increase D) none of these

7) Powder flow properties depends on
   A) particle size
   B) density
   C) electrostatic charge and adsorbed moisture
   D) all of these

8) _____ is a pioneer and father of Pharmaceutical Education in India.
   A) Prof. T.K. Gajjar B) Prof. M.L. Shcroff
   C) R.N. Chopra D) Both A and B

9) The books containing the standards for drugs and other related substances are known as
   A) Pharmacopoeia B) Formularies
   C) Compendia D) All of these

10) _____ solid dosage form that is placed between the teeth and cheek.
   A) Lozenges B) Sublingual C) Bucal D) Troches

11) _____ liquid preparation intended to be rubbed with friction and massaged onto the skin.
   A) Lotions B) Liniments C) Elixirs D) Droughts

12) Over the solid dosage form liquid dosage form have _____ advantage.
   A) Harder to measure accuracy
   B) Shorter life than other dosage form
   C) Easy to loss by the breakage of the container
   D) Flexible dosing

13) _____ example (tablet) of solid dosage form is to be injected parenterally.
   A) Soluble B) Hypodermic C) Sublingual D) Pills

14) One hectogram (hg) is equal to _____ grams.
   A) 100 B) 25 C) 75 D) 10

15) Dichlorodifluoromethane is used as _____ additive.
   A) Flocculating agents B) Lubricant
   C) Propellant D) Emulsifying agents

II. Answer **any five** of the following. **(5×5=25)**

1) Write a note on Aromatic waters.

2) Classify gaseous dosage form. Give its advantages and disadvantages.

3) What is profession ? Explain in detail Pharmaceutical industries in India.

4) Give importance of preformulation study and explain flow property parameter.

5) Explain about International Pharmacopoeia and Merk Index.

6) What is Metric system ? Convert following Imperial to metric system.

A) One fluid ounce

B) One pound

C) One minim

D) One pint

III. Answer **any three** of the following. **(10×3=30)**

1) Explain in detail additives of liquid dosage form give its limitation and uses/ application.

2) What is the importance of Pharmacopoeia ? Explain in detail British Pharmacopoeia.

3) Enumerate different preformulative study parameters and briefly explain them.

4) Elaborate in detail solid dosage form give its advantages and disadvantages.

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SLR-G – 2

Seat No.	

B.Pharmacy (Semester – I) (New-CBCS) Examination, 2016
PHARMACEUTICAL INORGANIC CHEMISTRY

Day and Date : Thursday, 1-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Choose the correct answer : **15**

1) Aluminium hydroxide gel has pH range
   a) 5.5 – 8 b) 8 – 10
   c) 3.5 – 5 d) 1.5 – 4

2) Calcium gluconate is used in the treatment of
   a) Hypocalcemia b) Hypokalemia
   c) Achlorhydria d) Insomnia

3) Mechanical antidote preventing _____ of poison.
   a) Distribution b) Absorption
   c) Excretion d) Metabolism

4) Sodium fluoride powder is soluble in
   a) Water b) Alcohol
   c) Chloroform d) None of the above

5) The synonym for magnesium sulphate is
   a) Epsom salt b) Precipitated chalk
   c) Green Vitriol d) None of the above

6) Limit test for chloride is based on _____of chloride with silver nitrate.
   a) Co-precipitation b) Nitration
   c) Precipitation d) Ignition

7) The principle use of sodium nitrite is in treatment of
   a) Cyanide poisoning
   b) Constipation
   c) Diarrhea
   d) None of the above

8) Warm denotes temperature
   a) 5°C
   b) Between 8°C to 25°C
   c) Between 30°C to 40°C
   d) 50°C

9) Large quantities of potassium causes
   a) Hypocalcemia
   b) Hyperkalemia
   c) Hypercalcemia
   d) None of the above

10) Hydrogen peroxide is assayed by _____ titration method.
   a) Redox
   b) Acid-Base
   c) Gasometric
   d) None of the above

11) Cylinder of carbon dioxide is painted by _____colour.
   a) White
   b) Blue
   c) Red
   d) Gray

12) Guitzeit apparatus is having _____ml capacity.
   a) 110
   b) 120
   c) 130
   d) 140

13) Nutritional deficiency of calcium leads to
   a) Hypokalemia
   b) Hyperkalemia
   c) Hyponytremia
   d) None of the above

14) _____ is major extracellular electrolyte in body.
   a) Magnesium
   b) Calcium
   c) Potassium
   d) Sodium

15) Potassium permanganate is acts as
   a) Reducing agent
   b) Oxidizing agent
   c) Antidote
   d) None of the above

2. Answer **any five** of the following questions : **(5×5=25)**

   1) Explain principle and procedure for limit test for chloride.

   2) Give detail account of magnesium sulphate as a catheretic.

   3) Write a note on oxygen as an official gas.

   4) Define protective and absorbent. Describe properties and uses of Bismuth subcarbonate.

   5) Enlist sources of impurities and explain in detail manufacturing process as a source of impurity.

   6) Draw a neat labeled diagram of Guitzeit apparatus. Give its specification.

3. Answer **any three** of the following questions : **(10×3=30)**

   1) Give detailed discussion of contents of monograph.

   2) Define astringent. Give preparation, properties and uses of Boric acid and silver nitrate.

   3) Explain in detail major intracellular and extracellular ions.

   4) Give different categories of dental product. Explain in detail sodium fluoride and zinc chloride.

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SLR-G – 3

Seat No.	

B.Pharm. (Semester – I) (New CBCS) Examination, 2016
BIOCHEMISTRY – I

Day and Date : Saturday, 3-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple Choice Questions : **(15×1=15)**

1) Glycosides are found in many
A) Vitamins B) Minerals C) Nucleoproteins D) Drugs

2) Glucose on oxidation with concentrated HNO_3 produces
A) Gluconic acid B) Mucic acid
C) Saccharic acid D) Saccharolactone

3) Gluconeogenesis can proceed from all of following except
A) Pyruvate B) Glycerol C) Lactate D) Urea

4) The simultaneous transport of two different molecules in the opposite direction is called as
A) Uniport B) Symport C) Antiport D) Cotransport

5) Iodine number denotes
A) Degree of rancidity
B) Degree of saturation
C) Degree of acidity
D) Degree of unsaturation

6) Esters of fatty acids with higher alcohols other than glycerol are said to be
A) Fats B) Oils
C) Waxes D) Triacylglycerides

7) Arachidonic acid contains the number of double bond
A) 2 B) 3 C) 5 D) 4

8) Mutarotation refers to change in
A) Ph B) Temperature
C) Optical rotation D) Chemical property

9) Ganglioside is subclass of
A) Phospholipid B) Lipoprotein C) Sulpholipid D) Glycolipid

10) These are called as digestive tract of the cell
A) Microsomes B) Chromosomes
C) Lysosomes D) Cytosol

P.T.O.

11) Which of the following is essential fatty acid ?
A) Arachidonic acid B) Lenoleic acid
C) Lenolenic acid D) All of the above

12) Invert sugar is
A) Lactose B) Maltose
C) Hydrolytic product of sucrose D) None of above

13) Direct oxidative pathway of glucose is
A) Glycogenesis B) Glycolysis
C) Glycogenolysis D) HMP Shunt

14) Name the compound with greatest free energy.
A) ATP B) Cyclic AMP
C) Phosphoenolpyruvate D) Posphocreatinine

15) The nitrogenous base in lecithin is
A) Serine B) Ethanolamine C) Cephalin D) Choline

2. Answer **any five** of the following questions : **(5×5=25)**
1) Give structure and functions of mucopolyosaccharides.
2) Explain the terms acid value, iodine value, saponification value.
3) Write short note on fluid mosaic model of cell membrane. Write about transport systems.
4) What are lipids ? Classify them with suitable example.
5) Explain structure and properties of sucrose and lactose.
6) Draw a neat labelled diagram of eukaryotic cell. Explain structure and function of power house of cell and lysosomes.

3. Answer **any three** of the following questions : **(3×10=30)**
1) Describe β-oxidation of stearic acid. Calculate net ATP yield.
2) Explain in detail TCA cycle with energetics. Add note on its amphibolic nature.
3) Explain in detail oxidative phosphorylation. Write inhibitors of ETC and uncouplers of oxidative phosphorylation.
4) Write in brief synthesis of glucose from noncarbohydrates.

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SLR-G – 4

Seat No.	

B.Pharmacy (Semester – I) (CBCS) Examination, 2016
ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION – I (New)

Day and Date : Tuesday, 6-12-2016 Max. Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

1. Choose the correct answer : **(1×15=15)**

1) _____ releases 'thrombopoeitin' which stimulate the platelet synthesis.
A) Pancreas B) Liver C) Kidney D) Salivary gland

2) _____ is function of lymph nodes.
A) Filtering B) Phagocytosis
C) Proliferation of lymphocytes D) All of above

3) Time required for atrial systole is _____ second.
A) 0.8 B) 0.1 C) 0.3 D) 0.4

4) Exchange of gases between blood and body cells is defined as _____ respiration.
A) internal B) external
C) alveolar ventilation D) other than A, B and C

5) Small intestine having _____ part known as jejunum.
A) curved B) straight C) coiled D) extended

6) A mentally healthy person is
A) Satisfy with himself B) Wel adjusted
C) Take own decisions D) All of above

7) For the transfusion of blood always donors _____ are considered.
A) RBC B) WBC
C) Platelets D) Other than A, B and C

8) Following one organ is not associated with spleen
A) Diaphragm B) Fundus C) Pancreas D) Liver

9) Blood passes through the right atrio-ventricular opening into the right ventricle. Here the opening is guarded by _____ valve.
A) Tricuspid B) Biscuspid
C) Semilunar pulmonary D) Semilunar aortic

P.T.O.

10) _____ lies behind the mouth.
A) Nasipharynx B) Oropharynx
C) Laryngopharynx D) Oesophagus

11) Secretion of saliva is under _____ nervous system.
A) central nervous B) peripheral
C) autonomic D) somatic

12) _____ is a bilobed nucleus in granulocytes.
A) Neutrophils B) Basophils
C) Eosinophils D) Lymphocytes

13) Lymphatic system consists of
A) lymph vessels B) lymph nodes
C) lymph organs D) all of above

14) _____ part of heart is less thicker.
A) Right atrium B) Left atrium
C) Left ventricle D) Right ventricle

15) Sound producing vocal cords are located in
A) Pharynx B) Larynx
C) Nasal cavities D) Other than A, B and C

2. Solve **any five** : **(5×5=25)**

A) List out various leukocytes and mention two important functions of each.

B) Write the composition and functions of lymph.

C) Briefly discuss the different components of ECG.

D) Discuss in brief the mechanism of respiration.

E) Name the salivary glands; write the composition and functions of saliva.

F) Explain physical and mental health.

3. Solve **any three** : **(10×3=30)**

A) Draw a neat labeled diagram of internal structure of heart, discuss the role of Renin Angiotensin system in regulation of blood pressure.

B) Explain hemolytic disorder of new born. Add a note on mechanism of hemostasis.

C) Show the structure of small intestine. Discuss the process of digestion in small intestine.

D) What is respiration ? Describe exchange of gases during internal and external respiration.

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SLR-G – 5

Seat No.	

B.Pharmacy (Semester – I) Examination, 2016
PHARMACOGNOSY – I (CBCS Pattern) (New)

Day and Date : Thursday, 8-12-2016 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

***Note** : Figures to **right** indicate marks.*

1. Multiple choice questions (MCQ) : **(1×15=15)**

1) Who is regarded as first pharmacist of world ?
   a) Seydler b) Gantle Fosse
   c) Galen d) Hippocrates

2) Xylem is _____ conducting tissue.
   a) Water b) Food
   c) Mineral d) Enzyme

3) Mayer test is used for the detection of
   a) Alkaloid b) Steroids
   c) Carbohydrates d) Tannins

4) Evaluation of crude drug means confirmation of
   a) Identity b) Purity
   c) Quality d) All of these

5) Simple permanent tissue do not consist of
   a) Parenchyma b) Collenchyma
   c) Sclerenchyma d) Phloem

6) _____ are harvested by long handled fork.
   a) Algae b) Fruits
   c) Rhizome d) Seeds

7) Digitalis contains _____ type of stomata.
   a) Anomocytic b) Anisocytic
   c) Dicytic d) Paracytic

8) Vatta is combination of
   a) Air and water b) Air and fire
   c) Air and void d) Air and earth

9) Determination of anti-stress activity is _____ method of evaluation.
   a) Organoleptic b) Biological
   c) Chemical d) Physical

10) Soil containing 1.5 to 5.0% of organic matter is known as _____ soil.
   a) Rich b) Poor
   c) Average d) Intermediate

11) _____ system of classification is popular approach for phytochemical studies.
   a) Alphabetical b) Pharmacological
   c) Morphological d) Chemical

12) Rauwolfia is used as _____
   a) Anticancer b) Antimalarial
   c) Cardio tonic d) Antihypertensive

13) Phloroglucinol and conc. HCl is used for staining of _____ cells.
   a) Lignified b) Volatile oil
   c) Cellulose d) Suberised

14) Identify the drug packed in goat skin
   a) Aloe b) Asafoetida
   c) Colophony d) Ergot

15) _____ is the example of organized crude drug.
   a) Agar b) Shilajit
   c) Clove d) Asafoetida

2. Answer **any five** of the following questions : **(5×5=25)**

   1) Discuss the Siddha system medicine.

   2) Write a note on :

      a) Collenchyma

      b) Parenchyma.

   3) Write a note on FOM.

   4) Differentiate between Root and Rhizome.

   5) Explain storage of crude drugs of natural origin.

   6) Classify crude drugs with suitable examples according to different parts of the plants.

3. Answer **any three** of the following questions : **(3×10=30)**

   1) Enlist different systems of classification of DONO. Add a note on therapeutic method of classification.

   2) Enlist methods of evaluation of DONO. Explain physical evaluation of DONO.

   3) Explain methods of cultivation with their merits and demerits.

   4) What is herbarium ? Give the importance and methodology of it.

SLR-G – 6

Seat No.	

B. Pharmacy (Semester – II) (CGPA) Examination, 2016
PHARMACEUTICS – II

Day and Date : Wednesday, 30-11-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

I. Multiple Choice questions. **(1×15=15)**

1) _____ is the example of elastic bandage.
   A) Domette bandage B) Crepe bandage
   C) Open woven bandage D) Triangular Calico Bandage

2) Deposition of aluminium on paper or plastic substrate is termed as
   A) Vulcanization B) Conditioning
   C) Metallization D) None of these

3) Aerosil in dry syrup formulation acts as
   A) Diluent B) Preservative
   C) Glident D) Suspending agent

4) _____ is used as closer liner.
   A) Induction B) Three-play C) Plastisol D) All of these

5) In radiation sterilization each suture receives a minimum dose of _____ megarads.
   A) 2.5 B) 2.6 C) 2.4 D) 3.4

6) Non-boilable catguts are packed in tubing containing alcohol with small quantity of
   A) Aldehyde B) Formaldehyde
   C) Isopropyl alcohol D) Water

7) _____ mill works on _____ principle of size reduction.
   A) Cutter, attrition B) Fluid, compression
   C) Hammer, impact D) Roller, cutting

P.T.O.

8) _____ is example of filter aid.

A) Perlite B) Diatomaceous earth

C) Glass wool D) Both A and B

9) _____ is inserted in a cap to affect a seal between closure and the container.

A) Liner B) Lug cap

C) Crown cap D) Both A and B

10) _____ equipment is used for liquid manufacturing.

A) Planetary mixer B) Sigma blade mixer

C) Air jet mixer D) Both A and B

11) _____ objective of size reduction.

A) To get effective extraction of drug

B) To increase surface area

C) To improve dissolution

D) All of these

12) Sigma blender is used as

A) static mixer for powders B) liquids mixer

C) tumbler mixer D) none of these

13) Cochineal is colorant obtained from _____ origin.

A) synthetic B) semi synthetic

C) animal D) all of these

14) To hide the skin blemishes _____ agent is used in talcum powder formulation.

A) adhesive B) covering C) absorbing D) none of these

15) Sodium alginate is used as _____ in solid dosage form.

A) Binder B) Diluent

C) Anti adherent D) Flavoring agent

II. **Note** : Answer **any five**. **(5×5=25)**

1) Explain briefly prevention of Aeration and Foam.

2) Describe in detail formulation and evaluation of tooth powder.

3) Define granulation. Explain wet granulation method in detail.

4) How will you select filters ? Write about disc filter.

5) Explain any one equipment used for liquid manufacturing.

6) Write a note on diluent and vehicles as pharmaceutical additives.

III. **Note** : Answer **any three**. **(10×3=30)**

1) What are the different factors affecting size reduction ? Explain in detail Cutter mill.

2) Classify sutures and ligatures. Explain manufacturing and quality control tests for surgical catgut.

3) Define the term primary and secondary packaging with example. Describe in detail glass and plastic as packaging material.

4) What are different types of mixtures ? Discuss in brief static mixers used for mixing of solids.

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SLR-G – 7

Seat No.	

B. Pharmacy (Semester – II) (CGPA) Examination, 2016
MODERN DISPENSING AND HOSPITAL PHARMACY

Day and Date : Friday, 2-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple Choice questions. **(1×15=15)**

1) Which of the following is part of prescription ?

A) Superscription B) Subscription

C) Inscription D) All of the above

2) A list of drug is known as

A) Pharmacopoeia B) Formulary

C) Dispensatory D) All of the above

3) "Tabella" means

A) An Ointment B) A Tablet C) A Solution D) A Pill

4) Proof spirit contains _____ %v/v of Ethyl alcohol.

A) 37.1 B) 47.1 C) 67.1 D) 57.1

5) PTC stands for

A) Pharmacy and Therapeutic Committee

B) Physiotherapy Centre

C) Pharmacy Training Centre

D) None of these

6) Radiopharmaceuticals are used in treatment of

A) Hair fall B) Fever

C) Cancer D) Cold and cough

7) Posology is related to

A) Dose B) Body weight

C) Age D) None of these

8) Oxygen is stored in metal cylinder having colour of

A) Black body and Grey top B) Black body and Brown top

C) Black body and Blue top D) Black body and White top

9) Cyclopropane is

A) Inert Gas B) Respiratory stimulant

C) Gaseous anaesthetic D) None of these

10) t.i.d. means

A) Three times a day B) Two times a day

C) Thirty times a day D) Triturate in dish

11) Carbon dioxide is used as

A) Respiratory stimulant B) Mild anesthetic

C) Pain killer D) Anti-diarrhoeal

12) An isotonic solution is one which

A) Does not cause crenulation

B) Has same salt composition of plasma

C) Does not cause haemolysis

D) Has a freezing point less than that plasma

13) "Pulvis" means

A) Powder B) A pill C) A paste D) Nasal drops

14) 88% means 88 out of one

A) Thousand B) Billion C) Hundred D) Million

15) The symbol ℞ stands for latin word recipe and means

A) Take B) Prepare C) Give D) Mix

2. Answer **any five**. **(5×5=25)**

a) Name different parts of prescription with their significance.

b) Calculate the volume of each 70%, 60%, 50% alcohol and water required to produce 300 ml of 40% alcohol.

c) What is Pharmacy and Therapeutic Committee ? What is its role in hospital ?

d) Give uses of computer in Hospital Pharmacy.

e) What is inventory control ? Give different methods of inventory control.

f) Calculate the real strength of 35° O.P (over proof) and 45° U.P (under proof).

3. Answer **any three**. **(10×3=30)**

a) Explain in detail drug distribution system in hospital.

b) Define incompatibility and explain in detail with example Physical and Therapeutic incompatibility.

c) Define posology and explain in detail calculation of doses of children by using various formulas based on body weight, age and surface area.

d) Explain in detail surgical and health accessories.

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SLR-G – 8

Seat No.	

B.Pharmacy (Semester – II) Examination, 2016
ORGANIC CHEMISTRY – I (CGPA)

Day and Date : Monday, 5-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple choice questions : **(1×15=15)**

1) The forces between the molecules of a non-polar compound are called as
   a) Vander-Walls forces b) Ionic forces
   c) Hydrogen bonding forces d) None of the above

2) The water molecule having _____ dipole moment.
   a) 1.46 D b) 1.84 D c) 0.24 D d) 0 D

3) _____ compound behaves like acid as well as base.
   a) Ammonia b) Nitrogen
   c) Hydrogen d) None of the above

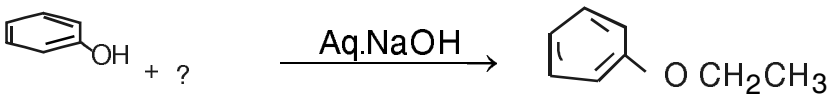
4) Primary alkyl halide shows majorly _____ type of substitution reaction.
   a) SN_1 b) SN_2
   c) SNi d) None of the above

5) In SN_2 reaction product shows _____ type of stereochemistry.
   a) Retention of configuration b) Inversion of configuration
   c) Racemic mixture d) None of the above

6) An effect on the availability of electron at the reaction center is called as
   a) Polar effect b) Non-polar effect
   c) Ionic effect d) None of the above

7) Oxidation of secondary alcohol gives
   a) Aldehyde b) Ketone c) Amine d) Cynide

8) Complete the following reaction.



   a) CH_3CH_2Br b) CH_3CH_2OH
   c) CH_3CH_2CN d) None of the above

P.T.O.

9) Conversion of smaller alkynes into larger ones is done by use of
   a) Metal acytylides
   b) Ethyl Bromide
   c) Metal Cyanides
   d) None of the above

10) Reduction of alkynes in the presence of Lindlars catalyst gives _____ Alkenes.
   a) Anti
   b) Cis
   c) Planner
   d) None of the above

11) E2 reaction follows _____ order kinetics.
   a) First
   b) Second
   c) Third
   d) None of the above

12) Alkynes are _____ in nature.
   a) Very weak acid
   b) Strong acid
   c) Very weak base
   d) Strong base

13) Reaction of propene with con. H_2SO_4 gives
   a) Isopropyl hydrogen Sulphate
   b) Isopropene
   c) Isopropyl alcohol
   d) None of the above

14) In Diels-Alder reaction the 1, 3- butadiene is reacted with _____ at 100° C to form Tetrahydrobenzaldehyde.
   a) Acroline
   b) Aniline
   c) Acytyline
   d) Salicylate

15) Complete the following reaction.

   $? \xrightarrow{Aq.NaOH} CH_2 = CH_2 + CH_4 + H_2$

   a) $CH_3 - CH_3$
   b) $CH_3CH_2CH_3$
   c) C_2H_5
   d) None of the above

2. Answer **any five** : **(5×5=25)**

1) Draw structure from following IUPAC Names
   a) 2, 3- dimethylbutane
   b) 1-Cyclopropylbutane
   c) 5-ethyl-2, 3-dimethyloctane
   d) 4-vinylcyclopentane
   e) 4, 4-dimethyl-1-pentane

2) Define polarity of bond, electro negativity, intermolecular forces, intramolecular force and inductive effect.
3) What do you mean by inductive and electromeric effect ? Explain in detail it.
4) Explain theory of acid and base. Add a note on factor affecting on acid-base strength.
5) Write preparation and reactions of alkynes.
6) What is alcohol and ether ? Explain qualitative test for detection of alcohol.

3. Answer **any three** : **(10×3=30)**

1) What is carbocation ? Explain in detail generation, stability and reaction of it.
2) Explain in detail SN_1 reaction mechanism. Add a note on factor affecting on it.
3) What is E1 and E2 reaction ? Explain Saytezeff, Hofmann and Markonikov's rules.
4) Explain in detail generation stability and reaction of free radicals. Add a note on Diels-alder reaction.

SLR-G – 9

Seat No.	

B.Pharm. (Semester – II) (CGPA) Examination, 2016
BIOCHEMISTRY – II

Day and Date : Wednesday, 7-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple choice questions : **(1×15=15)**

1) Million Reaction is specific for the amino acid
   a) Tryptophan b) Tyrosine
   c) Phenylalanine d) Arginine

2) Denaturation of proteins results in
   a) Disruption of primary str.
   b) Breakdown of peptide bonds
   c) Destruction of hydrogen bonds
   d) Irreversible changes in the molecule

3) Edman's reagent contains
   a) Phenylisothiocyanate b) 1-Fluoro-2, 4-dinitrobenzene
   c) Urea d) Dansyl chloride

4) Irreversible changes in the molecule at a pH below the isoelectric point, amino acid exists as
   a) Cation b) Anion
   c) Zwitter ion d) Undissociated

5) An aromatic amino acid is
   a) Lysine b) Arginine
   c) Phenylalanine d) Histidine

6) The process of transfer of amino group from an amino acid to keto acid called as
   a) Oxidative deamination b) Nonoxidative deamination
   c) Transdeamination d) Transamination

P.T.O.

7) Replication of DNA is
   a) Conservative
   b) Semi-conservative
   c) Non-conservative
   d) None of the above

8) Codons are present on
   a) mRNA
   b) tRNA
   c) rRAN
   d) None of these

9) Okazaki pieces are formed during synthesis of
   a) mRNA
   b) tRNA
   c) rRAN
   d) DNA

10) Trypsin is an example for the class of enzyme namely
   a) Oxidoreductases
   b) Transferases
   c) Hydrolases
   d) Ligases

11) The reaction given by two or more peptide linkage is
   a) Biuret test
   b) Xanthoproteic test
   c) Ninhydrin test
   d) Pauleys test

12) Name the compound with greatest free energy
   a) ATP
   b) Cyclic AMP
   c) Phospocreatine
   d) Phospoenolpyruvate

13) The following enzyme is a nucleotide
   a) FAD
   b) CoASH
   c) NAD
   d) All of the

14) The number of base pair present in each turn of DNA helix
   a) 9
   b) 10
   c) 11
   d) 12

15) The charged molecule which is electrically neutral is known as
   a) Zwitter ion
   b) Cation
   c) Anion
   d) Iso ion

2. Answer **any five** of the following questions. **(5×5=25)**
   1) Write in short about types of RNA.
   2) Give in short about factors affecting enzyme activity.
   3) Add note on denaturation of proteins.
   4) Discuss Sanger's reaction and Edman's reaction.
   5) Explain urea cycle in detail.
   6) Write a note on decarboxylation of amino acid.

3. Answer **any three** following questions. **(3×10=30)**
   1) Add note on protein biosynthesis.
   2) Explain the term biological oxidation. Explain in detail respiration chain.
   3) Define enzyme. Explain enzyme action with the help of models. Write in details about inhibitors of enzymatic action.
   4) What are the different levels at which proteins structure is studied ?

SLR-G – 10

Seat No.	

B. Pharmacy (Semester – II) (CGPA) Examination, 2016
ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION – II

Day and Date : Friday, 9-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple choice questions : **(1×15=15)**

1) Creatinine the waste product closely regulated by the brain and kidneys is the end product of the metabolism of

a) Ammonia b) Muscle c) Nucleotide d) Anarobic

2) What hormone does the pancreatic alpha cell secrete ?

a) Insulin b) Somatostatin c) Glucagon d) Somatotropin

3) The _____ of the testes secrete male hormone such as Testosterone.

a) Seminiferous tubules b) Sustentacular cells
c) Interstitial cells d) Efferent ductile

4) Muscle gets fatigue due to accumulation of

a) Lactic acid b) ATP
c) Phosphate molecules d) CO_2

5) How many laminae are present in the gray matter of spinal cord ?

a) Four b) Six c) Eight d) Ten

6) Correct sequence of embryo development

a) Gamete-zygote-morula-blastula-gastrula
b) Gamete-neurula-gastrula
c) Gamete-zygote-blastula-morula-gastrula
d) None of above

7) Which cranial nerves is responsible for eye movement ?
   a) Occulomotor b) Vagus c) Trigeminal d) Olfactory

8) Which of the following is the contractile protein of a muscle ?
   a) Tubulin b) Myosin c) Calcium d) All of above

9) What substance does aldosterone directly regulate the concentration of ?
   a) Potassium b) Phosphorous c) Sodium d) Calcium

10) Which part of human brain is concerned with the regulation of body temperature and urge for eating are contained in ?
   a) Cerebellum b) Cerebrum
   c) Medulla Oblongata d) Hypothalamus

11) Correct sequence for urine formation is
   a) Filtration, reabsorption, secretion b) Secretion, reabsorption, filtration
   c) Reabsorption, secretion, filtration d) Reabsorption, filtration, secretion

12) Mumps is the infection of
   a) Parotid gland b) Submandibular gland
   c) Sublingual gland d) Submaxillary gland

13) The Corpuscles in the skin, which are sensitive to pressure are called
   a) Pacinian corpuscles b) Ruffini corpuscles
   c) Krause corpuscles d) Meissner's corpuscles

14) Which of the following is the function of Sertoli cells ?
   a) Protection of the developing spermatogenic cells
   b) Nourishment of spermatocytes spermatid and sperm
   c) Mediation of the effect of testosterone and FSH
   d) All of above

15) Ciliary body in the eye ball is the extension of the
   a) Sclera b) Choroid c) Retina d) Cornea

2. Solve **any five**. **(5×5=25)**

   1) Outline action of Thyroid hormone; explain how blood level of thyroid hormone is regulated.

   2) Describe components of external, middle and internal ear.

   3) Discuss physiology of micturition.

   4) Discuss different contraceptive technique.

   5) Define communicable disease, write note on tuberculosis and hepatitis.

   6) Distinguish between sympathetic and parasympathetic nervous system.

3. Solve **any three**. **(3×10=30)**

   1) Discuss anatomy of sketetal muscle and explain in detail mechanism of muscle contraction.

   2) Discuss structure of nephron and explain the process of urine formation.

   3) Name the various cranial nerves, explain anatomy of spinal cord and comment on reflex arc.

   4) Discuss female reproductive system and hormone involved in it.

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SLR-G – 11

Seat No.	

B.Pharmacy (Semester – III) Examination, 2016
PHYSICAL PHARMACY – I (CGPA)

Day and Date : Tuesday, 29-11-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple choice questions : **(1×15=15)**
   1) In phase diagram, line showing degree of freedom is
      A) zero B) two C) three D) one
   2) For Newtonian fluids, the slope of rheogram is
      A) 1 B) 0 C) – 1 D) 2
   3) In the process of extraction substance from aqueous solution, the use of _____ is made.
      A) Conical flask B) Measuring flask
      C) Separating funnel D) Burette
   4) Ebullioscopy deals with study of
      A) depression in boiling point B) elevation in boiling point
      C) depression in freezing point D) elevation in freezing point
   5) Cup and bob is example of
      A) stationary B) rotational
      C) both A) and B) D) none of these
   6) Anisotropic property is shown by
      A) crystalline solid B) amorphous solid
      C) both A) and B) D) none of these
   7) The maximum work done in _____ process.
      A) reversible B) irriversible
      C) both A) and B) D) none of these
   8) Solubility of gases in liquid decreases if
      A) temperature is increased B) pressure is decreased
      C) salt is added D) all of these
   9) The liquid crystal have
      A) properties of supercooled liquid
      B) properties of amorphous substance
      C) fluidity of liquid and optical properties of a solid
      D) none of these

10) Rast camphor method is used to determine
A) depression in boiling point B) elevation in boiling point
C) depression in freezing point D) elevation in freezing point

11) Yield value is higher if suspension is
A) more flocculated B) more deflocculated
C) less deflocculated D) less flocculated

12) When water is cooled its entropy is
A) increases B) decreases
C) remains same D) either increases or decreases

13) Boiling point of solution is _____ than pure solvent.
A) higher B) lower
C) either higher or lower D) none of these

14) In Charle's law, volume is directly proportional to
A) temperature B) volume C) pressure D) none of these

15) At absolute temperature, entropy of pure crystal is
A) 1 B) 2 C) 0 D) 3

2. Answer **any five** : **(5×5=25)**

a) Explain Landsberger-Walker method for determination of molecular mass of solute with the help of neat diagram.

b) Derive Bragg's equation.

c) State and explain Henry's law with its limitations.

d) Write the limitations and applications of distribution law.

e) Define viscosity. Give its units. Explain the factors affecting it.

f) What are open, closed and isolated system with suitable example.

3. Answer **any three** : **(10×3=30)**

a) Explain in detail phase diagram of one component system with example.

b) Describe non-Newtonian type of flow with rheogram, mechanism and suitable examples.

c) State and derive Raoults law and give deviations of Raoult's law.

d) I) Write different types of classification of crystals with suitable example.

II) Give the principle and method of liquefaction of gases by Linde's method.

SLR-G – 12

Seat No.	

B.Pharmacy (Semester – III) (CGPA) Examination, 2016
PHARMACEUTICAL ENGINEERING

Day and Date : Thursday, 1-12-2016 Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple choice questions : **(1×15=15)**

1) Which piston pump requires a minimum of two valves ?

a) Double acting b) Triple acting

c) Single acting d) None of the above

2) Which conveyors are used for transporting finely divided solid ?

a) Belt b) Screw c) Pneumatic d) Chain

3) _____ process gives concentrated liquid reside.

a) Evaporation b) Drying

c) Distillation d) None of the above

4) Centrifugal pump is an example of

a) Reciprocating b) Rotary

c) Miscellaneous d) None of these

5) _____ comes under variable area flow meter.

a) Orifice b) Rotameter c) Venturi d) Pitot

6) How many evaporators are attached in multiple effect evaporators ?

a) 3 b) 5

c) Both a) and b) d) None of these

7) In which drying process water is removed from frozen state by sublimation ?

a) Tray drying b) Fluidised bed drying

c) Spray drying d) None of the above

P.T.O.

8) In fractional distillation following mixture is a example of Type II solution
   a) Water and methanol
   b) Water and nitric acid
   c) Water and ethanol
   d) All of the above

9) Following is not true in case of positive deviation from Raoult's law
   a) There are hydrogen bonding interactions
   b) Vapour pressure of individual components is lowered
   c) Salt formation and hydration between components of solution
   d) All of the above

10) A fluid flow is said to be laminar when
   a) The fluid particles moves in zigzag motion
   b) Reynolds number is high
   c) Fluid particles moves in parallel layers to boundary
   d) Both a) and b)

11) The method used to feed Multiple Effect Evaporator is
   a) Mixed feed
   b) Forward feed
   c) Parallel feed
   d) All of the above

12) In hydraulics pressure energy is measured in terms of _____ unit.
   a) Meter
   b) Joule
   c) Kilo Joule
   d) N/m^2

13) Spray dryer is based on following mechanism
   a) Pneumatic dryer
   b) Static bed dryer
   c) Fluidised bed dryer
   d) Moving bed dryer

14) Manometer is device used for measuring
   a) Velocity
   b) Pressure difference
   c) a) and b)
   d) None of the above

15) _____ solution distills unchanged at a constant temperature.
   a) Azeotropic
   b) Zeotropic
   c) Both a) and b)
   d) None of the above

2. Answer **any five** : **(5×5=25)**

a) Discuss the principle, construction and working of Rotameter.

b) Enlist the different conveyors used for handling of solid materials. Explain the principle, working and application of pneumatic conveyors.

c) Describe the principle, construction and working of steam distillation.

d) Define Pharmaceutical engineering. Write a note on material balance.

e) Enlist the different dryer used in pharmaceutical industry. Write in detail about principle, construction and working of Spray dryer.

f) Explain in detail principle, construction and working of horizontal tube evaporators.

3. Answer **any three** : **(10×3=30)**

a) Differentiate between Evaporation and Distillation. Discuss in detail Mc. Cabe Thiele method for calculation of number of theoretical plate.

b) Enlist the different flow meter used for measurement of rate of flow of fluid. Describe in detail principle, construction and working of orifice meter with neat labeled diagram.

c) Explain the theory behind drying. Write the application of drying.

d) Describe the factor affecting on rate of evaporation. Explain the principle, construction and working of climbing film evaporator.

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SLR-G – 13

Seat No.	

B.Pharmacy (Semester – III) (CGPA) Examination, 2016
ORGANIC CHEMISTRY – II

Day and Date: Saturday, 3-12-2016 Max. Marks : 70
Time: 3.00 p.m. to 6.00 p.m.

I. Choose the most appropriate one from the following answers. **(1×15=15)**

1) A phenol is more acidic if its _____ value is low.
   a) pK_b b) pK_a c) K_a d) K_b

2) Resonance energy of which of the following is the lowest.
   a) Phenanthrene b) Benzene
   c) Naphthalene d) Pyrrole

3) Electrophilic aromatic substitution at _____ position is preferred over other places in phenanthrene.
   a) 9 b) 2 c) 3 d) 1

4) Grignard's reagent can be used for preparing ketones only if the sample is not having
   a) H b) OH c) Cl d) –R

5) Alkyl lithium is a _____ alkylating agent compared to Grignard's reagent in preparing ketones.
   a) Better b) Equally effective
   c) Bad d) Inactive

6) Nucleophilic acyl substitution is seen with
   a) Alkanes b) Aldehydes
   c) Esters d) None

7) Phenols on reaction with sodium bicarbonate yield
   a) Sodium phenoxide b) Salicylic acid
   c) Salicyl aldehyde d) None

8) In Claisen rearrangement, _____ is converted into an alkyl phenol.

a) Diphenyl ether b) Diphenyl

c) Benzyl alcohol d) Methoxy phenol

9) A method to obtain primary amines directly from amides is _____ rearrangement.

a) None b) Hoffman's

c) Claisen d) Fries

10) Pyrrole can be prepared using

a) 1, 4 - diamines b) 1, 4 - diketones

c) 1, 4 - diols d) 1, 4 - dihalides

11) Diazotization reaction cannot be used to prepare

a) –F b) –OH c) –CHO d) –Br

12) The boiling point of the following compounds, with same mol. weight (58) is highest in

a) $CH_3CH_2CH_2CH_3$ b) CH_3CH_2CHO

c) CH_3COCH_3 d) $CH_3CH_2CH_2OH$

13) Electron releasing group on benzene ring _____ its reactivity towards EAS.

a) Increases b) Decreases

c) Has no effect on d) Destroys

14) $R-(=O)OR + R'OH \longrightarrow RC(=O)OR' + ROH$ is an example for

a) Condensation b) Elimination

c) Trans-esterification d) Addition

15) _____ is an anti-aromatic compound.

a) Benzene b) Cyclobutadiene

c) Cycloheptatriene d) None

II. Answer **any five** questions of the following. **(5×5=25)**

1) Write the industrial methods of preparation of poly nuclear hydrocarbons.

2) What is nucleophilic addition reaction ? Describe reactions of aldehydes with alcohols and amines.

3) Write five important reactions of phenols.

4) Write chemical reactions of carboxylic acids along with examples.

5) Compare the electrophilic substitution reactions of pyridine and pyrrole.

6) Explain the effect of electron withdrawing groups on EAS reactions in benzene.

III. Answer **any three** questions of the following. **(10×3=30)**

1) Explain in detail :
   1) Reformatsky reaction
   2) Cannizzaro reaction. **(5+5)**

2) Describe how the phenomenon of aromaticity was established in benzene.

3) Write the methods of preparation of :
   a) Quinoline
   b) Indole. **(5+5)**

4) a) How are primary, secondary and tertiary amines separated ? Explain with examples. **5**

   b) What is a diazotization reaction ? How is it useful in synthetic chemistry ? Explain with examples. **5**

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SLR-G – 14

Seat No.	

B.Pharm. (Semester – III) (CGPA) Examination, 2016
PHARMACEUTICAL ANALYSIS – I

Day and Date : Tuesday, 6-12-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple Choice Questions : **(1×15=15)**

1) Turbidometry is _____ type of titration.
   A) Classical B) Electrochemical
   C) Optical D) Thermal

2) The pH range for phenol red is
   A) 2.8 – 4.6 B) 4.2 – 6.3 C) 5.8 – 7.6 D) 6.8 – 8.4

3) In cerriometry _____ is used as an indicator.
   A) Ferric ion B) Ferroin solution
   C) Ferric sulphate D) Ferrous sulphate

4) Assay of ascorbic acid can be done by
   A) Cerriometry B) Iodimetry
   C) Both A) and B) D) Permangnometry

5) Proton aceptor is
   A) Arrhenius acid B) Arrhenius base
   C) Lewis acid D) Lewis base

6) For strong base-weak acid titration pH at equivalence point is
   A) 7< B) 7> C) 7 D) None

7) 20 gm NaOH in 1000 ml gives _____ M solution.
   A) 1 B) 0.5 C) 0.1 D) 0.05

8) Zeros are not significant when placed
   A) At the end of the no. B) Between significant no.
   C) To the right side of the no. D) To the left side of the no.

9) The concentration of the salt formed after neutralization is
   A) 0.03 B) 0.5 C) 0.05 D) 0.01

10) Each ml of 0.1 M cerric ammonium sulphate ≈ _____ gm of As_2O_3.
   A) 0.04904 B) 0.004946 C) 0.06106 D) 0.05845

11) Molar solubility of AgCl is _____ where Ksp is 1×10^{-10} in water.
   A) 1×10^{-10} B) 5.3×10^{-4} C) 4×10^{-10} D) 1×10^{-5}

P.T.O.

12) Eosin is used in the estimation of
A) Cl^- with Ag^+ B) Cl^-, Br^- with Ag^+
C) Cl^-, Br^-, I^- with Ag^+ D) Ag^+ with F^-

13) Iodine can be standardized by using
A) Arsenic trioxide B) Sodium thiosulphate
C) Both A) and B) D) Oxalic acid

14) Calibration of instruments and apparatus reduces _____ error.
A) Operational B) Instrumental
C) Method D) Personal

15) The substance which gets titrated is known as
A) Titrand B) Titrant
C) Secondary standard D) Primary standard

2. Answer **any five** of the following questions : **(5×5=25)**
1) Define : Titration, Molarity, Parts per million, Solute, Normality.
2) Define Law of mass action. Describe its any three applications.
3) Give the difference between oxidation and reduction. Add a note on self indicator.
4) Give the preparation and standardization of 0.1 M iodine with its principle behind it.
5) Define error. Explain its classification in detail.
6) Explain in detail Mohr's method.

3. Answer **any three** of the following questions : **(10×3=30)**
1) Explain neutralization curve for titration of 0.1 M NaOH Vs 0.1 M HCl.
2) Define pharmaceutical analysis. Explain its classification in detail.
3) Explain the preparation and standardization of 0.02 M $KMnO_4$. Explain any assay involving $KMnO_4$ as a titrant.
4) Discuss in detail minimization of error.

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SLR-G – 15

Seat No.	

B. Pharm. (Semester – III) (CGPA) Examination, 2016
PATHOPHYSIOLOGY AND CLINICAL BIOCHEMISTRY – I

Day and Date : Thursday, 8-12-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple choice questions : **(1×15=15)**

1) The study of causes of diseases is known as

A) Epidemiology B) Etiology

C) Histology D) Morphology

2) Nuclear fragmentation into small bits dispersed in the cytoplasm is known as

A) Pyknosis B) Karyolysis

C) Karyorrhexis D) Amorphous density

3) Rise in the blood pH due to rise in the bicarbonate levels of plasma and loss of H^+ ions is

A) Respiratory alkalosis B) Respiratory acidosis

C) Metabolic alkalosis D) Metabolic acidosis

4) Which of the sign of inflammation does mean swelling ?

A) Rubor B) Calor C) Dollar D) Tumor

5) Which of the following is/are exogenous factor(s) causing inflammatory Bowel Disease ?

A) Oral contraceptives B) Microbial infections

C) Smoking D) All of the above

6) Clinical manifestation of nephrotic syndrome includes

A) Heavy proteinuria B) Hypoalbuminaemia

C) Hyperlipidaemia D) All of the above

P.T.O.

7) Which of the following is the feature of benign tumour ?

A) Metastasis B) Encapsulated Boundaries

C) Rapid growth rate D) Invasion in surrounding tissues

8) Which of the following morphologic forms of reversible cell injury does show accumulation of water within the cytoplasm of the cell ?

A) Hydropic change B) Hyaline change

C) Fatty change D) Mucoid change

9) Decrease in the concentration of potassium is called as

A) Hyponatremia B) Hypokalemia

C) Hypovolemia D) None of the above

10) The nerve fiber involved in the pathway for slow pain

A) Aδ– B) C C) Fμ D) K-fiber

11) Progressive dysphagia due to neuromuscular dysfunction in which the cardiac sphincter fails to relax is called as

A) Peptic ulcer B) Achalasia C) Hiatus hernia D) Emesis

12) Increased accumulation of nitrogenous waste products of protein metabolism is

A) Septicemia B) Gout C) Toxemia D) Azotemia

13) Which of the following is the clinical feature of duodenal ulcer ?

A) Pain-food relief pattern B) Vomiting

C) No night pain D) Significant weight loss

14) Reduction in the number and size of parenchymal cells of an organ is

A) Atrophy B) Hypertrophy C) Hyperplasia D) Metaplasia

15) Which of the following is responsible for maintaining of calcium levels in body ?

A) Parathyroid hormone B) Anti-diuretic hormone

C) Atrial natriuretic peptide D) Aldosterone

2. Answer **any five** of the following questions. **(5×5=25)**

   1) Differentiate between dry gangrene and wet gangrene.

   2) Give normal value of sodium level in plasma. Describe the functions of hormones regulating plasma sodium level.

   3) Write a note on types, causes and morphologic features of Osteoarthritis.

   4) Distinguish between Chrohn's disease and ulcerative colitis.

   5) Write a note on clinical manitestations of acute nephritic syndrome.

   6) Define neoplasia. Describe the risk factors for cancer.

3. Answer the following questions (**any three**). **(3×10=30)**

   1) Define-apoptosis. Explain in detail-the mechanism of apoptosis.

   2) Write a note on the types, causes, physiological effects of acidosis and alkalosis.

   3) Write a note on etiology and pathogenesis of gastric ulcers.

   4) Describe the etiopathogenesis and clinical effects of chronic renal failure.

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SLR-G – 16

Seat No.	

B. Pharmacy (Semester – IV) (CGPA) Examination, 2016
PHYSICAL PHARMACY – II

Day and Date : Wednesday, 30-11-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple Choice Questions : **(1×15=15)**

1) Free flow powder particles are having _____
   A) High density B) Low internal porosity
   C) Low density D) Both A) and B)

2) On the addition of sufficient electrolytes to lyophilic sol leads to agglomeration. It is known as _____
   A) Salting out B) Creaming
   C) Braking D) None of these

3) The ideal suspending agent should have _____ at negligible shear.
   A) low viscosity B) high viscosity
   C) moderate viscosity D) zero viscosity

4) HLB rage of 7-9 are used as _____
   A) antifoaming agent B) solubilizing agent
   C) wetting agent D) o/w emulsifier

5) The phase in which surfactant is more soluble then it is continuous phase, this rule is given by _____
   A) Newton B) Griffin C) Bancroft D) Sorenson

6) Butter is _____ type of emulsion.
   A) o/w/o B) o/w C) w/o D) w/o/w

7) Breaking of emulsion is _____
   A) irreversible B) reversible
   C) partially reversible D) both A) and B)

8) Rubber forms _____ colloids with nonaqueous solvent.
   A) lipophilic B) hydrophilic C) lyophobic D) association

9) EDTA has _____ points for attachment to metal ion.

A) four B) nine C) two D) six

10) The particles forms colloid rich layer on mixing of oppositely charged hydrophilic colloids, known as _____

A) precipitate B) creaming

C) coacervate D) flocculate

11) As the particle size is increases by more than 5 μm, Brownian motion will be _____

A) increases

B) decreases

C) double

D) first increases then decreases

12) In first order reaction, half life is _____

A) dependent of the concentration

B) independent of the concentration

C) inversely proportional to concentration

D) square of the concentration

13) The temperature effect on rate of reaction is given by _____

A) Arrehenius B) Stoke C) Newton D) Fick's

14) A powder that sinks in liquid has _____ contact angle.

A) lesser B) no C) greater D) lesser and greater

15) Higher sedimentation volume for suspension indicates _____

A) Better physical stability

B) Worst physical stability

C) Moderate physical stability

D) None of these

2. Answer **any five** of the following : **(5×5=25)**

   a) What is meant by protective colloid ? Mention one example for the same.

   b) Comment on flow properties of powder and factors affecting it.

   c) Discuss capillary rise method for determination of surface tension.

   d) Discuss pseudo order of reaction with example.

   e) Write dispersion methods for preparation of lyophobic sol.

   f) Classify complexes and write a note on inclusion complex.

3. Answer **any three** : **(10×3=30)**

   a) Enlist the fundamental properties of powder and discuss about Coulter – counter method.

   b) Define stability and add a note on different modes of degradation with their correction.

   c) State and explain Langmuir adsorption isotherm.

   d) Define colloid. Explain electrical properties of sol.

SLR-G – 17

Seat No.	

B. Pharmacy (Semester – IV) Examination, 2016
(CGPA)
MICROBIOLOGY

Day and Date : Friday, 2-12-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Choose the correct answer : **(15×1=15)**

1) _____ is the locomoting organ in bacteria.
   a) Pilli b) Spore
   c) Flagela d) Mesosome

2) One of the following microorganism contains chlorophyll in cell structure.
   a) Virus b) Fungi
   c) Bacteria d) Algae

3) Bacterial conjugation is _____
   a) Uptake of extracellular DNA
   b) DNA transfer by cell to cell contact
   c) DNA transfer between bacteriophages
   d) All of the above

4) Attenuation in bacteria is _____
   a) Increased pathogenecity
   b) Exaltation
   c) Decreased pathogenecity
   d) Increased exaltation

5) One of the following is not true for rickettsia.
   a) Grow on nutrient agar
   b) Possess both DNA and RNA
   c) Obligate intracellular parasite
   d) Multiply by binary fission

6) One of the following is true for viruses.
   a) Grow on nutrient agar
   b) Cell wall contains muramic acid
   c) Contains mitochondria
   d) Lack their metabolic machinery

7) Sterilization concept was first demonstrated by scientist _____
   a) Antony Van Leeuwenhook
   b) Louis Pasteur
   c) Robert Koch
   d) Paul Ehrlich

8) For sterility testing of turbid pharmaceutical product, one of the following medium is used
   a) Fluid thioglycolate
   b) Soyabean casein digest
   c) Alternative fluid thioglycolate
   d) None of the above

9) Ridal – Walker test is used for _____
   a) Evaluation of disinfectants
   b) Biological indicators
   c) Sterility testing
   d) Sterilization

10) One of the following type antimicrobial agent used to apply on body tissue
   a) Disinfectants
   b) Preservative
   c) Antiseptics
   d) Sanitizers

11) Which of the following is more antigenic in nature ?
   a) Polysaccharide
   b) Protein
   c) Glucose
   d) Lipid

12) _____ is non-cellular organism.
   a) Yeast
   b) Bacterium
   c) Fungi
   d) Virus

13) Viruses that infects bacteria are called _____
   a) Bacteriophase
   b) Bacteriocines
   c) Mycoplasma
   d) Prions

14) Rickettsia are transmitted to humans by _____
   a) Bacteria
   b) Arthropods
   c) Viruses
   d) Actinomycetes

15) HEPA stands for _____
   a) High efficiency particulate air filter
   b) High effect pressure air
   c) High effect particles air
   d) Both a) and b)

2. Answer **any five** from the following : **(5×5=25)**
   1) Define bacterial spore. Explain with diagram.
   2) Write various biochemical tests for identification of bacteria.
   3) Enlist the chemicals used and write the principle of Gram staining.
   4) Write characteristics of fungi. Explain its types.
   5) Define the terms Virulence, Attenuation, Exaltation, Antigen and antibody.
   6) Define Bioburden, D-Value and Z-value. Write its significance in sterilization.

3. Answer **any 3** of the following : **(3×10=30)**
   1) Explain bacterial growth curve. Classify and explain bacterial cell counting methods.
   2) Explain structure of bacterial cell wall. Write difference between Gram positive cell wall and gram negative cell wall. Write two examples of each type.
   3) Write applications of fungi. Explain characteristics and uses of Penicillium with diagram.
   4) Write a note on viral multiplication with lytic growth cycle.

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SLR-G – 18

Seat No.	

B.Pharm. (Semester – IV) (CGPA) Examination, 2016
ORGANIC CHEMISTRY – III

Day and Date : Monday, 5-12-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

Multiple choice questions : **(1×15=15)**

I. Choose the most appropriate one from the following answers :

1) Diastereomer of a compound is
   a) Mirror image
   b) Not a mirror image
   c) Mirror image-superimposable
   d) Non-superimposable, not a mirror image

2) *Cis-Trans* isomers are generated by change in configuration on/around
   a) Double bond b) Cyclic structure
   c) Both d) None

3) A reaction in which replacement of –CHO by –OH on p-hydroxy Benzaldehyde occurs is
   a) Woolf b) Neber
   c) Dakin d) Fries

4) This pyrolysis technique yields single and stable product
   a) Chugave b) Cope
   c) Acetate pyrolysis d) None

5) In an addition reaction _____ is the first step.
   a) Attack of nucleophile
   b) Attack of electrophile
   c) Induction of dipole
   d) None

6) Conformational analysis of a molecule helps us to know the presence of
   a) Torsional strain b) Steric strain
   c) Angle strain d) All of these

7) Intramolecular nucleophilic substitution is seen in
   a) R-Cl b) R-SO_2Cl
   c) R-Br d) R-I

P.T.O.

8) Decarbonylation of isovaleraldehyde is _____ type of rearrangement.
   a) Electrophilic
   b) Nucleophilic
   c) Free radical
   d) Aromatic

9) One of the following is correct with pericyclic reactions. That is : they are
   a) Stereospecific
   b) Stereoselective
   c) Occours above 300° C
   d) Catalyzed

10) Chirality at a Carbon in a molecule is the result of
   a) Asymmetry
   b) Unequal electron distribution
   c) Dissimilar groups
   d) All

11) Atropoisomers are generated when the potential energy difference between two isomers is about
   a) 65-100 kJ/mol
   b) 3-10kJ/mol
   c) 10-50 kJ/mol
   d) 100-500 kJ/mol

12) Factor influencing the unimolecular nucleophilic substitution reaction greatly is
   a) Base strength
   b) Non polar solvents
   c) Nature of R-X
   d) None

13) _____ reactions are clean, single step and high yielding.
   a) Pyrolysis
   b) Elimination
   c) Addition
   d) Pericyclic

14) Willgerodt rearrangement is an example for _____ type of rearrangement.
   a) Electrophilic
   b) Nucleophilic
   c) Aromatic group transfer
   d) Free radical

15) Markovnikov's type of addition occurs in _____ reaction.
   a) Hydrogenation
   b) Hydration
   c) Hydroboration
   d) Halogenation

II. Answer **any five** questions of the following : **(5×5=25)**

1) Explain geometrical isomerism. How do you determine the configuration of geometrical isomers ?

2) What are pericyclic reactions ? Explain any one in detail.

3) Explain curtius rearrangement. Give its mechanism and synthetic applications.

4) Define stereoselectivity and stereospecificity. Write a note on the stereochemistry in addition reactions.

5) Write Fishers, Saw-Horse, Newmans, Dotted-Line-Wedge representations for 2-bromo, 3-chloro-butanol.

6) What is Cohn-Ingold-Prelog method of assignment of configuration of stereoisomers ? Explain with an example.

III. Answer **any three** questions of the following : **(3×10=30)**

1) Explain the term elimination reaction. Differentiate between types of elimination reactions giving their mechanisms.

2) What are molecular rearrangements ? Describe one reaction each of aromatic and electrophilic rearrangement type.

3) Why resolution of racemic mixtures necessary ? Describe some important methods used for resolving racemic mixtures.

4) a) Write a note on Chugave elimination.

   b) What is conformational analysis ? Explain with a suitable example the importance of configuration in chemistry and biology.

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SLR-G – 19

Seat No.	

B.Pharm. (Semester – IV) (CGPA) Examination, 2016
PHARMACEUTICAL ANALYSIS – II

Day and Date : Wednesday, 7-12-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple choice questions : **(1×15=15)**

1) Which method is official for assay of Norfloxacin ?

a) UV Spectrometry b) Polarography

c) Non-aqueous titration d) IR Spectroscopy

2) Aprotic solvents have _____

a) Acidic properties

b) Basic properties

c) Both acidic and basic properties

d) No acidic or basic properties

3) Which of the following indicator used in complexometric titration ?

a) Crystal violet b) Mureoxide

c) Eosin d) Methyl orange

4) What is the reagent used for diazotization ?

a) Tin + H_2SO_4 b) Zn + dil.H_2SO_4

c) KNO_3 + dil.H_2SO_4 d) $NaNO_2$ + dil.H_2SO_4

5) Which of the following is Aprotic solvent ?

a) CCl_4 b) N_2O

c) Acetic acid d) Amine

6) Mordant black-2 is blue at about pH

a) 2.5 b) 5.2 c) 8.0 d) 10

P.T.O.

7) EDTA forms complexes with most of cation in ratio of _____
   a) 1 : 4 b) 1 : 3
   c) 1 : 2 d) 1 :1

8) The drug not assayed by Kjeldahl method is _____
   a) Sulphadiazine b) Tolbutamide
   c) Pentamidine Inj. d) MeclozineHcl

9) Dielectric constant of Aprotic solvent is _____
   a) Medium b) High
   c) Low d) Very high

10) Excess of precipitating agent generally _____ the solubility.
   a) Increases b) Decreases
   c) Slightly affect d) Does not affect

11) Liquid sampling is done for large containers from _____
   a) Top layer b) Middle layer
   c) Bottom layer d) All of these

12) Paracetamol analysis involves limit test for _____
   a) Chloride b) Sulphate
   c) Heavy metal d) Arsenic

13) _____ act as self indicator.
   a) Karl-Fischer b) EDTA
   c) Perchloric acid d) None of these

14) The determination of halogen done by _____
   a) Kjeldahl method
   b) Karl-Fischer method
   c) Oxygen flask combustion method
   d) Argentometry method

15) RIA gives _____ of the sample.
   a) Radiating power b) Complex forming ability
   c) Concentration d) None of these

2. Answer **any five** : **(5×5=25)**

   1) Define complexometric titration. Describe complexometric indicators.

   2) Write about titrant, its standardization and indicator used in estimation of weak base by non-aqueous method.

   3) Describe the theory of sodium nitrite titration. Give the standardization of sodium nitrite.

   4) Write a note on different absorbing reagent. Explain working of Nitrometer.

   5) Explain oxygen flask combustion method.

   6) Write a note on Kjeldahl method.

3. Answer **any three** of the followings : **(10×3=30)**

   1) Explain in detail classification of EDTA titration. Add a note on masking and demasking agents.

   2) Give the theory of sampling. Explain sampling of liquid.

   3) Give the diagram, preparation and standardization of Karl-Fischer method.

   4) Define Gravimetric analysis. Give in detail sampling, dissolution, digestion and ignition. Explain assay of Zinc Sulphate by Gravimetry.

SLR-G – 20

Seat No.	

B.Pharmacy (Semester – IV) (CGPA) Examination, 2016
PATHOPHYSIOLOGY AND CLINICAL BIOCHEMISTRY – II

Day and Date : Friday, 9-12-2016 Max. Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

Instructions *: 1) Figures to* ***right*** *indicate* ***appropriate*** *marks.*
2) Appropriate Flow Charts, Algorithms, Tables and Illustrations shall fetch ***appropriate*** *marks.*

1. Choose the most appropriate alternative for following multiple choice questions : **(1×15=15)**

1) Calcium toxicity is involved in arrhythmias caused by
   a) Delayed after depolarizations b) Early after depolarizations
   c) Circus movement type re-entry d) Fractionation of impulse

2) Following mediators are implicated in myocardial hypertrophy EXCEPT
   a) Angiotensin – II b) ANP
   c) BNP d) Histamine

3) The following are Acute Coronary Syndromes EXCEPT
   a) Acute myocardial infarction b) Variant angina
   c) Unstable angina d) Sudden cardiac arrest

4) Specific feature of asthma seen in sputum examinations is
   a) Curshmann's spirals b) Pus filled sputum
   c) Polyps d) Blood filled sputum

5) The histopathologic appearance of lungs in lobar pneumonia resembles that of liver and called
   a) Pannus formation b) Pseudopolyposis
   c) Hepatization d) Granulomatous

6) Neuronal microtubule damage in Alzheimer's disease occurs due to _____ and leads to _____ formation.
   a) Synuclein accumulation and lewy bodies
   b) Lipid deposition and foam cell
   c) Fibrin accumulation and pleurisy
   d) Tau protein hyperphosphorylation and NFTs

7) Elevated _____ activity is observed in _____
   a) Dopaminergic, Parkinson's disease
   b) Dopaminergic, Schizophrenia
   c) Cholinergic, Alzheimer's
   d) Adrenergic, Depression

8) HIV infection with CD4+ T Cell count of less than _____/μl defines AIDS.
   a) 500 b) 300 c) 350 d) 200

9) Most common and serious respiratory fungal infection in AIDS patients is caused by
   a) *Aspergillus* b) *Pneumocystis Carinii*
   c) *Tinea* d) *Yeast*

10) _____ is an example of delayed type hypersensitivity reactions.
   a) Contact dermatitis b) Serum sickness
   c) Angioedema d) SLE

11) The joint involvement in RA is generally
   a) Symmetric b) Asymmetric c) Diffuse d) Axial

12) The early symptoms of muscle weakness in ocular Myasthenia Gravis include
   a) Scleritis and Uveitis b) Diplopia and Ptosis
   c) Conjunctivitis d) Glaucoma

13) _____ is a clinical sign of hyperthyroidism.
   a) Goiter b) Dry skin
   c) Heat intolerance d) Myxoedema

14) Glomerular filtration rate measurement is a renal function test performed by
   a) Inulin Clearance Test b) Hippuric acid excretion
   c) Rose Bengal Test d) Urine Electrolyte Measurement

15) Which of the following statements is false about Type I Diabetes Mellitus ?
   a) It starts at early age
   b) Insulin levels are generally normal or increased
   c) Excess hyperglycemia leads to ketoacidosis
   d) It is characterized by progressive reduction in number of beta cells in islets of Langerhans

2. Answer the following (**any five**) : **(5×5=25)**

   A) Define hypertension. Classify of hypertension on etiologic and clinical basis.

   B) Write briefly about etiopathogenesis of pulmonary embolism.

   C) What is Alzheimer's disease ? Describe its pathogenesis and manifestations.

   D) What are Liver Function Tests ? Enlist them. Describe any one.

   E) Write definition and etiopathogenesis of myasthenia gravis. Mention its signs and symptoms.

   F) Define hypothyroidism. Mention its causes, signs and symptoms.

3. Answer the following (**any three**) : **(10×3=30)**

   A) Define bronchial asthma. Write an account of its etiology and triggers, pathogenesis, signs and symptoms.

   B) Write definition of rheumatoid arthritis. Describe its etiopathogenesis. Add a brief note on its clinical manifestations, diagnosis and management.

   C) Write a pathophysiological account of AIDS including causative agent, modes of transmission, phases of infection, effects on immune status and opportunistic infections.

   D) Define heart failure. Write causes and types of heart failure.

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SLR-G – 21

Seat No.	

B.Pharm. (Semester – V) (New-CGPA) Examination, 2016
PHARMACEUTICS – III

Day and Date : Tuesday, 29-11-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. MCQ : **(15×1=15)**

1) _____ Microencapsulation technique is suitable for only solids.
   a) Air suspension b) Pan coating
   c) Both a) and b) d) Solvent evaporation

2) Ratio of Glycerin : Gelatin in SGC is _____
   a) 0.4 : 1 b) 0.6 : 1
   c) 0.8 : 1 d) 1 : 1

3) Type B gelatins are generally derived from _____
   a) Animal bones b) Animal skin
   c) Both a) and b) d) None of these

4) Friability test for conventional compressed tablets is less than _____ % is acceptable.
   a) 0.5% b) 1%
   c) 1 – 2% d) 0.5 – 2%

5) In sugar coating _____ material is used for polishing.
   a) Calcium carbonate b) Gelatin
   c) Carnauba wax d) None of these

6) _____ is the 3rd step of Coacervation phase separation technique of microencapsulation.
   a) Deposition of coating b) Formation of 3 immiscible phases
   c) Rigidization of coating d) Both a) and b)

7) Unequal distribution of colour to tablet is known as _____
   a) Mottling b) Capping
   c) Lamination d) Filling

8) _____ is example of hardness tester.
   a) Monsanto b) Pfizer
   c) Erweka d) All of above

9) Subcoating is done for _____
   a) Rounding of tablet edges b) Grossing of tablets
   c) Both a) and b) d) None of these

10) D tooling is for _____ type tablet.
a) Small b) Very small
c) Large d) None of above

11) _____ process improves flow property.
a) Fluidization b) Granulation
c) Size reduction d) None of above

12) The material to be encapsulated is called as _____ material.
a) Core b) Coating
c) Both a) and b) d) Polymer

13) _____ is example of Binding agent.
a) Acacia b) Talc
c) Both a) and b) d) Lactose

14) _____ is used for preparation of Capsule shell.
a) Sodium alginate b) HPMC
c) Gelatin d) Both a) and b)

15) _____ technique not belongs to Coacervation phase separation method.
a) Polymer – polymer interaction b) Pan coating
c) Temperature change d) Salt addition

2. Solve **any five** : **(5×5=25)**

1) Give an account on sugar coating.
2) Explain briefly evaluation of Microcapsules.
3) Discuss need and evaluation of Granulation.
4) Write a note manufacturing of Hard gelatin capsule shell.
5) Draw and explain layout of tablet section.
6) Distinguish between Hard Gelatin Capsule and Soft Gelatin Capsule.

3. Solve **any three** : **(10×3=30)**

1) Write applications of Microencapsulation. Explain any two methods of Microencapsulation.
2) Explain in brief manufacturing of soft gelatin capsules.
3) Explain in detail Q. C. test for tablets.
4) Write on problems occurred during tablet manufacturing, give remedies for the same.

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SLR-G – 22

Seat No.	

B.Pharmacy (Semester – V) (New CGPA) Examination, 2016
BIOPHARMACEUTICS

Day and Date : Thursday, 1-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Choose the correct answer : **(1×15=15)**

1) Drugs which bind selectively to plasma protein have apparent volume of distribution _____ than their true volume of distribution.
   a) Smaller b) Larger
   c) Equal d) None of the above

2) _____ is highly perfused organ.
   a) Lung b) Kidney c) Brain d) All of the above

3) Central compartment consists of
   a) Poor perfusion b) Highly perfusion
   c) Low vascularity d) Both (a) and (b)

4) Which polymorph represents higher energy state, lower M.P. and higher aqueous solubility ?
   a) Metastable b) Stable c) Monotropic d) Enatiotropic

5) A decrease in the drug metabolizing ability of an enzyme is called as
   a) Enzyme inhibition b) Enzyme induction
   c) Auto-induction d) Both (a) and (b)

6) Nonlinearity in pharmacokinetics of a drug is due to saturation of
   a) Protein binding b) Hepatic metabolism
   c) Active renal transport d) All of the above

7) The pH of a buffer system can be calculated with the
   a) Noyes – Whitney equation
   b) Henderson – Hasselbalch equation
   c) Michaelis – Menten equation
   d) Stokes equation

8) Drug with following property will have better chance to cross blood brain barrier
   a) High lipophilicity b) High hydrophilicity
   c) Low O/W partition coefficient d) None of these

9) Which phase represent if the rate of elimination exceeds rate of absorption ?
   a) Absorption phase b) Elimination phase
   c) Peak plasma concentration d) Both (a) and (b)

P.T.O.

10) Endocytosis is also called as
   a) Corpuscular b) Vesicular
   c) Both (a) and (b) d) Ion transport

11) Pharmacokinetics means study of
   a) What the drug does to the body b) What the body does to drug
   c) Both (a) and (b) d) None of these

12) Which transport process involves movement of molecules in the opposite direction ?
   a) Antiport b) Symport c) Ion transporter d) ABC transport

13) When the solvent in association with the drug is water, the solvate is known as
   a) Anhydrate b) Amorphous
   c) Hydrate d) None of the above

14) Which of the following enzymes affect presystemic metabolism ?
   a) Luminal enzymes b) Phosphogenase
   c) Bacterial enzymes d) Both (a) and (b)

15) Which marker is used to measure the volume of plasma ?
   a) Evans blue b) Inulin c) Mannitol d) None of these

2. Answer **any five** of the following : **(5×5=25)**
   1) What is non-linear pharmacokinetics ? Describe various causes of non-linearity in pharmacokinetics.
   2) Discuss in detail diffusion layer model and surface renewal theory.
   3) Describe the Enterohepatic Cycling of drug.
   4) Define Elimination. Explain the factor affecting elimination.
   5) What is Biopharmaceutics ? Write a note on Biopharmaceutical Classification System.
   6) Describe in detail Michaelis Menten Equation.

3. Answer **any three** of the following : **(10×3=30)**
   1) What is distribution ? Describe in detail factor affecting distribution of drug.
   2) Define Pharmacokinetics. Describe the types of Pharmacokinetics model.
   3) Explain in detail method for measurement of Bioavailability.
   4) Enlist the factor affecting Absorption. Describe the physicochemical properties of drug substances related factor affecting absorption.

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SLR-G – 23

Seat No.	

B.Pharm. (Semester – V) (New CGPA) Examination, 2016
MEDICINAL CHEMISTRY – I

Day and Date : Saturday, 3-12-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple Choice Questions : **(15×1=15)**

1) Lipophilicity can be characterized by
   A) Ionization B) Partition coe
   C) Solubility D) Diffusion

2) Synonym of Mebendazole is
   A) Antimenth B) Vermox
   C) Pyrentel D) Mentazole

3) The heterocyclic ring is present in Mebendazole.
   A) Benzothiazole B) Thiazole
   C) Benzimidazole D) Furan

4) Emetine is used as
   A) Antimaleria B) Antiamoebic
   C) Anthelmentic D) Antiviral

5) Metronidazole having efficacy due to _____ group, this participates in endogenous reduction process.
   A) Nitro B) Amino
   C) Alkyl D) None of these

6) Mechanism of action of sulphonyl ureas
   A) Blocking ATP sensitive K^+ channels in β cell
   B) Reduce glycogenolysis
   C) Reduce intestinal absorption of glucose
   D) Reduce serum lipids

P.T.O.

7) Nitroimidazole derivatives are

A) Metronidazle B) Mebendazole

C) Albendazole D) All of above

8) One of the following is glycopeptides antibiotics

A) Bleomycin B) Actinomycin D

C) Methramycin D) Pyrazinamide

9) _____ is known as high cellng diuretics.

A) Mannitol B) Furosemide

C) Spironlactone D) None of these

10) Aldosterone antagonist drug gives diuretic effect at collecting duct is

A) Acetazolamide B) Triamterene

C) Spironolactone D) Chlorothiazide

11) One of the following belongs to biguanides class

A) Phenformin B) Tolbutamide

C) Acarbose D) Glibenclamide

12) _____ is the starting material for the synthesis of Tolbutamide.

A) Aniline B) Sulphanilamide

C) Toluene D) Methylanilline

13) C-12 position is a part of the keto-enol system present in _____

A) Microlide antibiotics B) Penicillins

C) Tetracyclines D) Aminoglycoside

14) One among the following is not an osmotic diuretic

A) Urea nitrate B) Glycerol

C) Mannitol D) Isosorbide

15) Streptomycin is obtained from

A) Streptomyces capreolus B) Streptomyces venezulae

C) Streptomyces orchidaceous D) Streptomyces griseus

2. Answer **any five** of the following questions : **(5×5=25)**

   1) Discuss in detail solubility and surface activity.

   2) Write a note on receptor and biological response.

   3) Write MOA and SAR of cephalosporin.

   4) Write the synthesis of metronidazole and chloropropamide.

   5) Discuss in detail of potassium sparing diuretics.

   6) Write a note on sulphonyl urease.

3. Answer **any three** of the following questions : **(3×10=30)**

   1) Classify antibiotics. What happen when Penicillin undergo degradation ?

   2) Write in detail phase I reaction.

   3) Write the synthesis and uses of Mebendazole and Furosemide.

   4) Discuss forces involved in drug receptor interaction.

SLR-G – 24

Seat No.	

B.Pharmacy (Semester – V) Examination, 2016
(New CGPA)
PHARMACEUTICAL ANALYSIS – III

Day and Date : Tuesday, 6-12-2016 Total Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

1. Choose the correct answer : **(15×1=15)**

1) Bathochromic shift depends upon
   a) Isolated double bond b) Conjugated double bond
   c) Thermal conductivity d) Absorption of light

2) The internal standard used in flame photometry is
   a) Strontium b) Lithium c) Barium d) Aluminium

3) Which of the detector is not used in AAS ?
   a) Photodiode b) Ruby crystal
   c) Photodiode array d) Photomultiplier

4) The sample containing cell of a spectrophotometer consists of
   a) Glass b) Silica c) Alumina d) Polymer

5) Which of the following is an electromagnetic radiation ?
   a) Heat b) Current c) Sound d) Radio waves

6) In UV spectrophotometer the source of light is
   a) Tungsten filament lamp b) Mercury lamp
   c) Sodium lamp d) Electric lamp

7) The fluorescence can be generally enhanced by _____ substituent groups.
   a) $-COOH$ b) $-NO_2$ c) $-NH_2$ d) $-N=N-$

8) Incident radiation of spectrophotometer is dispersed by passing the light through
   a) Slit b) Filter c) Grading d) Prism

9) All the sample withdrawn in the sample inlet capillary can be completely atomized by using
   a) Lundergraph burner b) Laminar flow burner
   c) Total consumption burner d) Mecker burner

P.T.O.

10) Properties of light can be represented by
   a) Maxwell theory
   b) Corpuscular or wave theory
   c) Einstein theory
   d) Plank's equation

11) The commonly used detector in Flame photometry is
   a) Photo Multiplier Tube
   b) Bolometer
   c) Thermocouple
   d) Lithium prism

12) Absorption is defined by
   a) Einstein's law
   b) Arrhenius law
   c) Ostwald's law
   d) Beer's law

13) An important characteristics of electromagnetic radiation is
   a) It propagates only in one direction
   b) The energy carried by an electromagnetic radiation is inversely proportional to the frequency
   c) It is characterized by its wavelength
   d) It is produced by the oscillation of electric charge and magnetic field

14) Which one of these is not a emission spectroscopy ?
   a) Flame photometry
   b) Fluorescence
   c) Phosphorescence
   d) Infrared

15) Which of the following elements is most easily detected by flame photometry ?
   a) Lithium b) Beryllium c) Sodium d) Titanium

2. Answer **any five** : **(5×5=25)**

1) Explain bathochromic shift, hypsochromic shift and choice of solvents in UV.
2) Explain the principle of flame photometry.
3) Give the principle involved in FES. Explain the advantages of AAS over FES.
4) Write complete account on derivation of Beers-Lambert's Law.
5) Define the terms wavelength, wave number and frequency, specific absorbance and molar absorptivity.
6) Explain the application of UV-Vis spectrophotometer.

3. Answer **any three** : **(3×10=30)**

1) Explain the instrumentation of flame photometry along with their application.
2) Draw neat labeled diagram of atomic absorption spectroscopy. Explain the radiation source and atomizers used in atomic absorption spectroscopy.
3) Derive the simultaneous equation method for assay of substances in multicomponent analysis.
4) Explain principal of fluorescence along with factor affecting fluorescence intensity.

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SLR-G – 25

Seat No.	

B.Pharmacy (Semester – V) Examination, 2016
(New CGPA)
PHARMACOLOGY – I

Day and Date : Thursday, 8-12-2016 Total Marks : 70
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple choice questions/objective type questions : **(15×1=15)**

1) A competitive antagonist is a substance that
   a) Interacts with receptors and produces submaximal effect
   b) Binds to the same receptor site and progressively inhibits the agonist response
   c) Binds to the non-specific sites of tissue
   d) Binds to one receptor subtype as an agonist and to another as an antagonist

2) Which of the following is α_1-selective antagonist ?
   a) Phentolamine b) Dihydroergotamine
   c) Prazosin d) Labetalol

3) Which of the following agents is a ganglion-blocking drug ?
   a) Homatropine b) Hexamethonium
   c) Rapacuronium d) Edrophonium

4) The derivative of lysergic acid for migraine attack prevention is
   a) Metoclopramide b) Methysergide
   c) Sumatriptan d) Ergotamine

5) Which of the following cholinesterase inhibitor is reversible
   a) Isoflurophate b) Carbochol
   c) Physostigmine d) Parathion

6) Atropine is highly selective for
   a) M_1 receptor subtype b) M_2 receptor subtype
   c) M_3 receptor subtype d) All of the above

7) The increase of second messengers' (cAMP, cGMP, Ca^{2+}, etc.) concentration leads to
   a) Inhibition of intracellular protein kinases and protein phosphorylation
   b) Protein kinases activation and protein phosphorylation
   c) Blocking of interaction between a receptor and an effector
   d) Antagonism with endogenous ligands

8) Which of the following is related to direct-acting a cholinomimetic agent ?
   a) Edrophonium
   b) Physostigmine
   c) Carbachol
   d) Isoflurophate

9) Direct effects on the heart are determined largely by
   a) α_1 receptor
   b) α_2 receptor
   c) β_1 receptor
   d) β_2 receptor

10) Pilocarpine is used for
   a) Glaucoma
   b) Paralytic ileus
   c) Urinary retention
   d) All of the above

11) A teratogenic action is
   a) Toxic action on the liver
   b) Negative action on the foetus causing foetal malformation
   c) Toxic action on blood system
   d) Toxic action on kidneys

12) Ocuserts are
   a) Placed under the eyelid
   b) Intrauterine contraceptives
   c) Monoclonal antibodies
   d) None of the above

13) Tachyphylaxis to many actions on repeated injection is a feature of the following autacoid
   a) Histamine
   b) 5-Hydroxytryptamine
   c) Bradykinin
   d) Prostaglandin E_2

14) What does the term "potentiation" mean ?
   a) Cumulative ability of a drug
   b) Hypersensitivity to a drug
   c) Fast tolerance developing
   d) Intensive increase of drug effects due to their combination

15) Isoproterenol is
   a) Both α-and β-receptor agonist
   b) β_1-selective agonist
   c) β_2-selective agonist
   d) Non-selective beta receptor agonist

2. Answer **any five** : **(5×5=25)**

1) Give the muscarinic action of acetylcholine on heart and various smooth muscles.
2) Write a note on Synergism and Antagonism.
3) Give classification of anti-cholinergic drugs with examples. Write a note on pharmacological actions of Atropine.
4) Write a note on various systematic routes of drug administration with suitable examples.
5) Write in brief about nature and sources of drugs.
6) Classify Ganglionic Stimulants and Ganglionic Blockers with examples.

3. Answer **any three** : **(3×10=30)**

1) Write in brief the chemistry, biosynthesis and degradation of prostaglandins. Add a note on their pharmacological actions.
2) Classify the H_1 anti-histaminics with suitable examples. Write the pharmacological actions and adverse effects of Chlorpheniramine.
3) Write a note on G-protein coupled receptors. Discuss the Second Messengers used by GPCRs.
4) What are Adrenergic Drugs ? Enumerate them in a classified manner. Write Pharmacological Actions, Adverse effects, Contraindications, Interactions and uses of Adrenaline and/or Adrenergic Drugs.

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SLR-G – 26

Seat No.	

B.Pharm. (Semester – V) Examination, 2016
BIOTECHNOLOGY (New CGPA)

Day and Date : Saturday, 10-12-2016 Max. Marks : 70

Time : 10.30 a.m. to 1.30 p.m.

1. Multiple choice questions. **(15×1=15)**

1) Insulin chain is made up of _____ Amino acids.
A) 100 B) 51 C) 21 D) 61

2) The Yeast used for apple fermentation is
A) Wine B) Vodaka C) Cider D) Whisky

3) _____ discovered streptomycine.
A) Waksman B) Fleming C) Kary Mullis D) Jaksman

4) _____ is an example of cytokinin.
A) Kinetin B) Zeatin
C) Abscisic acid D) A and B

5) The speed control of the agitator in the fermentation process is monitored by
A) Rotameter B) Tachometer
C) Manometer D) Visual index

6) _____ is the central element present in Vitamin B12.
A) Boron B) Cobalt C) Copper D) Magnesium

7) All of the following requires aeration during fermentation process EXCEPT
A) Penicillin B) Dextran
C) Streptomycin D) Vitamin B12

8) _____ is the biotechnological product used in treatment of TB.
A) Streptomycin B) Penicillin
C) Vancomycin D) Azithromycin

9) PCR is discovered by
A) Alexzander B) Karry Mullis C) Robort Hook D) Robort Koch

10) Plasmid is used as
A) Adaptor B) Vector C) Carrier D) All of the above

11) The enzyme used in genetic engineering is ____
A) Ligase B) Endonuclease
C) Polymerase D) All of the above

12) _____ is common cryoprotectant used in cryopreservation.
A) Acetamide B) Ethylene glycol
C) Dimethyl glycol D) All of above

13) The inducing agent in protoplast fusion is
A) Cryogen B) Allergen
C) Fusogen D) None of the above

14) _____ is called as father of PTC.
A) Karry Mullis B) Rolls
C) Gottlieb Haberlandt D) Robort Koch

15) Identify the enzyme used in thromboembolic disease.
A) Streptokinase B) Urokinase C) Bromokinase D) A and B

2. Answer **any five** of following : **(5×5=25)**

1) Discuss scope of Biotechnology with examples.
2) Explain crypreservation.
3) Enlist different steps of DSP explain any one.
4) Explain plasmid as vector.
5) Enlist various culture. Explain callus culture.
6) Discuss the production of MABs.

3. Answer **any three** of following : **(10×3 =30)**

1) Explain principle, construction and working of gel electrophoresis process.
2) Explain production of streptomycin by fermentation.
3) Explain different methods of isolation of protoplasts.
4) Explain Polymerase chain reaction.

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SLR-G – 27

Seat No.	

B. Pharmacy (Semester – V) Examination, 2016
SOLID DOSAGE FORM (Old)

Day and Date : Tuesday, 29-11-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

I. Choose the correct alternative : **(1×16=16)**

1) _____ is used in enteric coated tablets.
   a) HPMC b) CMC c) CAP d) All of these

2) Gelatin is used as a binding agent in the following concentration
   a) 2 – 10% b) 50 – 70% c) 5 – 20% d) 100%

3) Which of the following is used as a plasticizer in capsule formation ?
   a) Glycerol b) Sorbitol
   c) Propylene glycol d) All of these

4) Coacervation phase separation technique is used for
   a) Neosomes b) Liposomes
   c) Microencapsulation d) Sustained release drug formulation

5) _____ is an unequal distribution of colour on a tablet.
   a) Mottling b) Sticking c) Both a) and b) d) None of these

6) Which one of true if responsible for hardness of tablet ?
   a) Die filling b) Compression force
   c) Both a) and b) d) None of these

7) Friabilator is operated for _____ revolution per minute.
   a) 100 b) 50 c) 75 d) 25

8) Capping is prevented by using _____ punches.
   a) Flat b) Circular c) Square d) Rectangular

9) Starch is used as disintegrant in the concentration of
   a) 40% b) 5 – 20% c) 60% d) 50%

10) Seal coating is done by
   a) Acasia b) Shellac c) Galatine d) None of the above

11) Which one of these is a example of opacifier ?
   a) TiO_2 b) MgO c) Silicates d) All of these

12) Empty capsule has moisture content in the range of
   a) 60% b) 12 – 15% c) 50 – 70% d) 30%

P.T.O.

13) Hardness of tablet is measured by
   a) Pfizer tester b) Erweka tester
   c) Strong cobb d) All of the above

14) In capsule rotofil is used for filling
   a) Powder b) Pellets c) Liquids d) None of these

15) One of the following ingredients which improve the flow property of granules is
   a) Glident b) Emollient c) Lubricant d) Surfactant

16) Sub coating of tablets is used
   a) To protect from breaking b) To increase taste
   c) To increase bulkiness d) To increase solubility

SECTION – I

II. Answer **any four** : **(4×4=16)**

1) Describe the test for disintegration for tablets as given in official compendium.
2) Describe mechanism of granules formation.
3) Describe various Q.C. tests for microcapsule.
4) Discuss in detail sugar coating.
5) Comment on enteric coating materials.
6) Write a note on FBD.

III. Answer **any two** : **(8×2=16)**

1) Classify microencapsulation techniques and explain about phase separation conservation techniques.
2) Discuss in a brief characterization and evaluation of granules.

OR

Explain preparation of hard gelatin capsule shell.

SECTION – II

IV. Answer **any four** : **(4×4=16)**

1) Explain various defects of tablet coatings.
2) Which ingredients are necessary for making tablets and give the role of lubricants.
3) Write various applications of microcapsules.

4) Draw layout of tablet manufacturing section.

5) What are the advantages and disadvantages of capsule dosage forms ?

6) Enlist different method of granulation and explain in detail about dry granulation method.

V. Answer **any two** : **(8×2=16)**

1) Describe the working of capsule filling machine.

2) Explain briefly evaluation of capsules.

OR

Write short note on soft gelatin capsule and pan coating.

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SLR-G – 28

Seat No.	

B.Pharmacy (Semester – V) Examination, 2016
PHARMACOLOGY – I (Old)

Day and Date : Thursday, 8-12-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

Instructions *: 1) Figures to* ***right*** *indicate* ***full*** *marks.*
2) Mention main question and sub-question number ***correctly*** *for* ***each*** *of the answers.*
3) Algorithms/charts may be drawn ***wherever*** *necessary.*

1. Choose the most appropriate alternative for following multiple choice questions. **(1×16=16)**

1) _____ of the following is a drug obtained from plant source.
   a) Lanolin b) Pyrethrin
   c) Penicillin d) Insulin

2) The route of choice used for administration of bulk volume preparations is _____
   a) Oral b) Topical
   c) Intravenous d) Intra-arterial

3) _____ is an example of drug commonly administered by sublingual route.
   a) Nitroglycerine b) Aspirin
   c) Paracetamol d) All of these

4) Bioavailability of an administered dose of a drug is 100% with _____ route.
   a) Oral b) Topical
   c) Subcutaneous d) Intravenous

5) Which of the following drugs remain more unionized in acidic environment of stomach ?
   a) Quinine b) Ethanol
   c) Streptomycin d) Aspirin

6) Apparent volume of distribution of highly protein bound drugs ranges from
   a) 0.05 – 0.2 L/kg
   b) 0.2 – 0.4 L/kg
   c) 1 – 5 L/kg
   d) > 5 L/kg

7) _____ of the following is directly excreted in colon.
   a) Digoxin
   b) Erythromycin
   c) Propranolol
   d) Anthraquinone purgatives

8) In case of First Order Drug Elimination, _____ of the following is true
   a) Constant amount of drug is eliminated per unit time
   b) Constant fraction of drug is eliminated per unit time
   c) Rate of Elimination decreases with increase in plasma concentration
   d) Rate of Elimination increases with increase in plasma concentration

9) GPCRs are composed of transmembrane α -Helices which traverse the membrane _____ times.
   a) 4 b) 5 c) 6 d) 7

10) Affinity is defined as _____
   a) Ability of a drug molecule to occupy or bind with the receptors
   b) Capacity of the drug to induce conformational change in receptor protein and activate it
   c) Both a) and b)
   d) None of these

11) Which pair represents physiological antagonism ?
   a) Activated Charcoal and Alkaloidal Drugs
   b) Chelators and Heavy Metals
   c) Acetylcholine and Noradrenaline
   d) Acetylcholine and Atropine

12) Tachyphylaxis is also called as _____
   a) Acute Tolerance
   b) Actue Dependence
   c) Chronic Tolerance
   d) Chronic Dependence

13) _____ of the following choline esterase inhibitor is preferred in treatment of Myesthenia gravis.
   a) Physostigmine b) Tacrine
   c) Neostigmine d) Echothiophate

14) Which of the following cholinergic drug is used in the treatment of Glaucoma ?
   a) Acetyl Choline b) Methacholine
   c) Carbachol d) Pilocarpine

15) _____ of the following adrenergic drug is used as uterine relaxant.
   a) Adrenaline b) Isoprenaline
   c) Isoxsuprine d) Timolol

16) _____ of the following is a depolarizing neuromuscular blocker.
   a) d-TC b) Acetylcholine
   c) Succinylcholine d) Mivacurium

2. Answer the following (**any four**) : **(4×4=16)**

   A) Define Essential Drugs. Mention criteria for selection of essential drugs.

   B) Enlist advantages and disadvantages of intravenous route of drug administration.

   C) Write a note on Enzyme Induction and Enzyme Inhibition.

   D) Write a brief note on Bioavailability and Plasma Half Life.

   E) Write a note on channels of drug elimination.

   F) Define Receptors. Enlist various types of receptors.

3. Answer the following (**any two**) : **(2×8=16)**

   A) Describe the factors affecting drug absorption in detail.

   B) Write detailed notes on drug toxicity in man.

   C) What are Adrenergic Drugs/Sympathomimetic drugs ? Enumerate them in a classified manner. Write Pharmacological Actions, Adverse effects, Contraindications, Interactions and uses of Adrenaline and/or Adrenergic Drugs.

4. Answer the following (**any four**) : **(4×4=16)**

   A) Describe Second Messengers used by GPCRs.

   B) Define efficacy and potency. How do these terms differ from each other ?

   C) Define Therapeutic Index, Synergism and Antagonism.

   D) Classify Ganglionic Stimulants and Ganglionic Blockers with examples.

   E) Classify Skeletal Muscle Relaxants and mention their uses.

   F) Write symptoms, first aid and treatment of OPC/Insecticide Poisoning.

5. Answer the following (**any two**) : **(2×8=16)**

   A) Define Drug Metabolism. Describe phase-I and phase-II reactions in detail.

   B) What are Anticholinergic/Parasympatholytic drugs ? Enumerate them in a classified manner. Write Pharmacological Actions, Adverse effects, Contraindications, Interactions and uses of Atropine.

   C) Write an elaborate account on 'Factors modifying Drug Action'.

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SLR-G – 29

Seat No.	

B.Pharmacy (Semester – VI) Examination, 2016
SEMISOLID DOSAGE FORM

Day and Date : Wednesday, 30-11-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple Choice Questions : **(1×16=16)**

1) Lanolin is
   a) Anhydrous wool fat b) Hydrous wool fat
   c) Both a) and b) d) None of these

2) Lipgloss is a
   a) Transparent lipstick which give shine to the lips
   b) Applied after lipstick to make it more adherent
   c) Lipstick used in winter to protect lips from dry
   d) Liquid lipsticks used to colour lips

3) Cream formation phenomenon is
   a) Permanent b) Reversible
   c) Irreversible d) Steady

4) On the view of rheology, paste show which type of flow ?
   a) Plastic b) Dilatant
   c) Pseudoplastic d) Newtonian

5) Creams of o/w type are called
   a) Vanishing cream b) Cold cream
   c) Both a) and b) d) None of these

6) Mascara preparation is available in _____ form.
   a) Liquid b) Cream
   c) Cake d) All the above

7) What is the use of stearic acid in vanishing cream ?
   a) Increase consistency b) Increase transparence
   c) Increase white shining d) Maintain stiffness

8) Cold cream phase containing long chain alcohol or easter or acid while ointment containing
   a) Aromatic compound b) Hydrocarbon
   c) Resin d) Fat

P.T.O.

9) Which of the following is related to compound benzoic acid ointment BPC ?
   a) Whitefield's ointment
   b) Antifungal ointment
   c) Keratolytic
   d) All of these

10) Barrier cream is used to protect skin from
   a) Microorganism
   b) Viral infection
   c) Sunlight injury
   d) Ultra violet rays

11) Unna's paste contain
   a) Zinc oxide
   b) Zinc oxide and sulphur
   c) Zinc oxide and gelatin
   d) Zinc oxide and boric acid

12) Vanishing cream is an ointment but may be classified as
   a) Water soluble base
   b) Oleaginous base
   c) Absorption base
   d) Emulsion base

13) Xerogels are
   a) Solid gel with high solvent concentration
   b) Solid gel with low solvent concentration
   c) Solid gel with less cross linking
   d) Gel without solvent

14) How much % of concentration of Borax should be used for cold cream ?
   a) 1% of total formula
   b) 0.5% of total formula
   c) 2% of total formula
   d) 2.5% of total formula

15) W/O emulsion bases are used as
   a) Bulk
   b) Protective
   c) Emollients
   d) All the above

16) Which vegetable oil is mostly useful in lipstick ?
   a) Caster oil
   b) Liquid paraffin
   c) Almond oil
   d) Peanut oil

SECTION – I

2. Answer **any four** : **(4×4=16)**

1) Define the term paste. How does it differ from ointments ?
2) How is non-staining iodine ointment prepared ?
3) Write brief on water soluble bases.
4) Discuss formulation of Unna's paste.
5) What is mascara ? And give ideal characteristic.
6) Classify creams and write a short note on vanishing cream.

3. Answer **any two** : **(8×2=16)**

1) What is ointment base ? Discuss the qualities of an ideal ointment base and describe various factors governing the selection of an ideal ointment base.
2) What are jellies ? Describe in brief the formulation of jellies.

OR

2) What do you know about lipsticks ? Explain the qualities of a good lipstick.

SECTION – II

4. Answer **any four** : **(4×4=16)**

1) Write a note on cold cream.
2) Write a note on cosmetics and write advantage and disadvantage.
3) Discuss various factor affecting drug permeability through the skin.
4) Write a short note on structure of skin.
5) Define cream and discuss formulation of cream.
6) Write a brief note on gels.

5. Answer **any two** : **(8×2=16)**

1) Write procedure, principle for any antifungal ointment preparation.
2) Define jellies and explain in detail evaluation test of jellies.

OR

2) Discuss various evaluation tests for creams.

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SLR-G – 30

Seat No.	

B.Pharm. (Semester – VI) Examination, 2016
MEDICINAL CHEMISTRY – II

Day and Date : Friday, 2-12-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple choice questions : **(16×1=16)**

1) Topically used sulphonamide is
   A) Sulphadoxin B) Sulphamethoxazole
   C) Silver sulphadiazine D) Dapsone

2) A potent inhibitor of thymidylate synthatase is
   A) Naftifine B) 5-Fluocytosine
   C) Ciclopirox D) Ketocanazole

3) An antineoplastic agent by folate antagonism and having a pteridine ring
   A) Trimethoprim B) Mercaptopurine
   C) Methotrexate D) Folate

4) The drug useful to treat multidrug resistant tuberculosis
   A) Isoniazide B) Ethionamide C) Rifampin D) Pyrazinamide

5) Which of the drug is used in treatment of UTI infection ?
   A) Nalidixic acid B) Ethionamide C) Ciclopirox D) Vincristine

6) One of the following antiviral agent exhibit the greatest selective toxicity for the invading virus
   A) Amantidine B) Zidovudine C) Idoxuridine D) Acyclovir

7) Amodiaquine is a derivative of
   A) 3-aminoquinoline B) 4-aminoquinoline
   C) 2-aminoquinoline D) 5-aminoquinoline

8) INH act by inhibiting the enzyme
   A) Transpeptidase B) Mycolase synthatase
   C) Folate synthatase D) Protein synthatase

9) Which of the drug is DHFR inhibitor ?
   A) Chloroquine B) PAS C) Trimethoprim D) Sulfadiazine

10) Which of the following drug used in the treatment of TB and Leprosy ?
   A) Dapsone B) INH
   C) Sulphapyridine D) Chloroquine

11) Nucleotide containing
   A) Nitrogen base, sugar, phosphate
   B) Sugar, phosphate
   C) Nitrogen base, sugar
   D) All of the above

12) Primaquine is an antimalarial drug is synthesized from
   A) Anisole B) Nitrophenol C) Phenol D) Aniline

13) One of the following pyrimidine derivative
   A) Flucytosine B) Tolnaftate C) Amphotericin D) 5-azaguanine

14) _____ is the ultra long acting sulphonamide.
   A) Sulphasalazine B) Sulphadizine
   C) Trimethoprim D) None of the above

15) _____ is adverse effect mainly associated with quinoline containing agents.
   A) Phototoxicity B) Ototoxicity
   C) Nephrotoxicity D) None of the above

16) Nalidixic acid inhibit _____ enzyme.
   A) Topoisomerase – IV B) Topoisomerase – I
   C) Ligase D) None of the above

2. Answer **any four** of the following questions : **(4×4=16)**

1) Write a note on 9-aminoacridine with eg.
2) Write in detail note on RTI.
3) Write imidazole derivatives as a antifungal agent.
4) Draw a structure, chemical name and uses of
   a) Amodiaquine b) Dapsone
   c) Sulphamethoxazole d) Cycloserine
5) Classify sulphonamide with structure.
6) Write a note on DOT.

3. Answer **any two** of the following questions : **(2×8=16)**
   1) Classify antineoplastic agent giving suitable eg. Explain MOA of Alkylating agent.
   2) Explain life cycle of malarial parasite and classify antimalarial drug with examples.
   3) Explain MOA and SAR of sulphonamide.

4. Answer **any four** of the following questions : **(4×4=16)**
   1) Explain the drugs used as folic acid inhibitor as antimalarial agent.
   2) Explain MOA of nitrosourease with eg.
   3) Write the uses and synthesis of clotrimazole.
   4) Write a note on quinoline containing agent as antibacterials.
   5) Write MOA anthracyclic antibiotics.
   6) Write SAR and MOA of Isoniazide.

5. Answer **any two** of the following questions : **(2×8=16)**
   1) Write a note on viral replication cycle classify with eg.
   2) Write MOA and SAR of quinoline derivatives as a antimalarial agent.
   3) Write the synthesis and uses of Isoniazide, Nalidixic acid, Chloroquine, Amantidine.

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SLR-G – 31

Seat No.	

B. Pharm. (Semester – VI) Examination, 2016
PHARMACEUTICAL ANALYSIS – IV

Day and Date : Monday, 5-12-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

1. Multiple Choice questions. **(16×1=16)**

1) The electode whose potential depends upon the concentration of ion present called

a) Indicator b) Reference c) SCE d) SHE

2) Both current and potential are measured in

a) coulometry b) amperometry
c) electrogravimetry d) voltametry

3) Shape of polarographic curve is

a) M-shaped b) S-shaped
c) Linear shaped d) T-shaped

4) A conductivity cell is calibrated using a solution of

a) KCL b) NaCl c) Hg_2Cl d) Na_2SO_4

5) _____ detector are used in IR spectroscopy.

a) thermal b) photo c) a and b d) none

6) The presence of _____ group shows the vibrational frequency at 1720 cm^{-2}.

a) amine b) carbonyl c) hydroxyl d) all

7) For non cyclic molecules _____ bending vibration occurs.

a) 2n-5 b) 3n-6 c) 2n-6 d) 3n-5

8) Broder bands are observed due to

a) intermolecular H-bonding b) intramolecular H-bonding

c) symmetric vibration d) +ve inductive effect

9) Specific conductance of conductor is reciprocal of

a) equivalent conductance b) conductance

c) molar conductance d) specific resistance

10) Potentiometer is used to measure

a) EMF b) Temperature

c) Concentration d) Resistance

11) The solvent not used in IR

a) DMSO b) $CHCl_3$ c) CS_2 d) H_2O

12) Twisting is where

a) bond angle decreases b) bond angle maintained

c) bond angle increases d) none of above

13) _____ technique sample weight is recorded as a function of time at constant temp.

a) isothermal TG b) dynamic TG

c) quasistatic TG d) inert TG

14) Static air atmosphere in TG means

a) Air from the atmosphere b) Compressed air from cylinder

c) Nitrogen free from O_2 d) None of above

15) In calomel electrode, thick paste of calomel used is

a) Mercurous chloride with KCl b) KCl Solution

c) Mercury d) H_2O

16) _____ is measured in DTA.

a) dh/dt b) ΔT c) Mass d) Temp.

2. Answer **any four** of the following questions. **(4×4=16)**

   1) Give various modes of vibration in IR spectroscopy.

   2) Explain with a diagram of TG-750 thermobalance.

   3) Define terms specific conductance, refractive index and Ohm's law.

   4) Two different types of electrode used in potentiometry. Explain working of glass electrode.

   5) Explain construction and working of DME.

   6) What are the requirements for a vibration to be IR active ?

3. Answer **two** of the following questions. **(2×8=16)**

   1) Give in brief different sampling techniques of IR.

   2) Explain factor affecting TG curve.

   3) Explain various regions of IR radiations. Write note on finger print region also give the application of IR spectroscopy.

4. Answer **any four** of the following questions. **(4×4=16)**

   1) How DTA used in measurements of heat of reaction, specific heat ?

   2) Explain the instrumentation of circular dichroism with two applications.

   3) What is thermal analysis ? Give the different types of thermogravimetric methods.

   4) Explain Mull technique.

   5) What is refractometry ? Explain with neat labeled diagram Abbe's refractometer.

   6) Explain in detail half shade effect.

5. Answer **two** of the following questions. **(2×8=16)**

   1) Give theory involved in potentiometry. Explain working of SCE.

   2) Explain with neat labeled diagram instrumentation of polarimeter and give its applications.

   3) Discuss the factor affecting vibrational frequency.

SLR-G – 32

Seat No.	

B. Pharmacy (Semester – VI) Examination, 2016
PHARMACOLOGY – II

Day and Date : Wednesday, 7-12-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

Instructions : *1) Figures to the **right** indicate **full** marks.*
*2) Mention main question and sub-question number correctly for **each** of the answers.*
*3) Algorithms/charts may be drawn **wherever** necessary.*

1. Choose the most appropriate alternative for following MCQs. **(1×16=16)**

1) Angiotensin II causes rise in blood pressure by
   a) Direct Vasoconstriction
   b) Releasing adrenaline from adrenal medulla
   c) Increasing central sympathetic tone
   d) All of the above

2) Glyceryl trinitrate is administered by the following routes EXCEPT
   a) Oral b) Sublingual
   c) Intramuscular d) Intravenous

3) Histamine exerts the following actions EXCEPT
   a) Dilatation of large blood vessels
   b) Dilatation of small blood vessels
   c) Stimulation of isolated guinea pig heart
   d) Itching

4) Codeine is used clinically as
   a) Analgesic b) Antitussive
   c) Antidiarrhoeal d) All of the above

5) Which prokinetic drug(s) produce(s) extrapyramidal side effects ?
   a) Metoclopramide b) Cisapride
   c) Domperidone d) All of the above

6) One of the most common side effect of inhaled beclomethasone dipropionate is
   a) Pneumonia b) Oropharyngeal candidiasis
   c) Atrophic rhinitis d) Pituitary-adrenal suppression

7) The following is a selective 5-HT_4 agonist
   a) Buspirone b) Sumatriptan
   c) Cisapride d) Clozapine

8) Saline osmotic purgatives are used for
   a) Treatment of constipation
   b) Prevention of constipation in patients of piles
   c) Avoidance of straining at stools in patients of hernia
   d) Tapeworm infestation : following niclosamide administration

9) Vitamin K is indicated for the treatment of bleeding occurring in patients
   a) Being treated with heparin b) Being treated with streptokinase
   c) Obstructive jaundice d) Peptic ulcer

10) Thiazide diuretics are the preferred first line antihypertensives for the following category of patients
   a) Young hypertensives
   b) Physically and sexually active male hypertensives
   c) Elderly obese hypertensives
   d) Diabetic hypertensives

11) Digitalis slows the heart in congestive heart failure by
   a) Increasing vagal tone
   b) Decreasing sympathetic over activity
   c) Direct depression of sinoatrial node
   d) All of the above

12) The following drug increases cardiac output in congestive heart failure without having any direct myocardial action
   a) Captopril b) Digoxin c) Amrinone d) Dobutamine

13) Angiotensin converting enzyme inhibitors are contraindicated in
   a) High renin hypertensives
   b) Diabetics
   c) Congestive heart failure patients
   d) Pregnant women

14) Low doses of heparin prolong
   a) Bleeding time
   b) Activated partial thromboplastin time
   c) Prothrombin time
   d) Both b) and c)

15) The following 5-HT receptor is not a G-protein coupled receptor
   a) 5-HT_1 b) 5-HT_2 c) 5-HT_3 d) 5-HT_4

16) Select the fastest acting inhaled bronchodilator
   a) Ipratropium bromide b) Formoterol
   c) Salbutamol d) Salmeterol

2. Answer the following (**any 4**) : **(4×4=16)**
   1) Explain mechanism of action and uses of Minoxidil as vasodilator.
   2) What are anit-arrhythmic drugs ? Classify them with suitable example.
   3) Write note on angiotensin converting enzyme inhibitors as a class of diuretics.
   4) Give an account of antiemetics.
   5) What are autocoids ? Explain triple response of histamine.
   6) Define toxicology. Explain how Dimercaprol is useful to treat heavy metal poisoning.

3. Answer the following (**any 2**) : **(8×2=16)**
   1) Classify H_1 anti-histaminics with examples. Add a note on adverse effects and uses H_1 anti-histaminics.
   2) Classify antiulcer drugs. Discuss in detail the management of peptic ulcer.
   3) Classify drugs used in 'Cardiac arrhythmia'. Discuss the pharmacology of Quinidine.

4. Answer the following (**any 4**) : **(4×4=16)**

   1) Define antacids and expectorants. Give two examples.

   2) Write in brief the mechanism of action of calcium channel blockers as anti-anginal drugs.

   3) Explain in brief cathartics and purgatives with suitable example.

   4) What is shock ? Write in detail the drugs used in therapy of shock.

   5) Write in brief about parenteral iron preparation.

   6) Give the adverse effects and uses of Heparin.

5. Answer the following **(any 2)**. **(8×2=16)**

   1) What are antihypertensives ? Enlist most important antihypertensives in current clinical practice. Add a note on Beta blockers as antihypertensives.

   2) List out Antiasthamatic Drugs with examples. Write role of Corticosteroids in treatment of Asthma.

   3) Discuss the biosynthesis, physiological role and pharmacological actions of prostaglandins.

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SLR-G – 33

Seat No.	

B.Pharmacy (Semester – VI) Examination, 2016
CLINICAL PHARMACOLOGY

Day and Date : Friday, 9-12-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

1. Choose the correct answer (MCQ) : **(1×16=16)**

1) What type of drug required special care in patient with hepatic dysfunction ?
   a) Drug undergoing extensive first pass metabolism
   b) Drug with narrow margin in safety
   c) Both a) and b)
   d) None of above

2) Which of the following is required element of an informed consent ?
   a) Clearly defined potential toxicities
   b) A statement that participation is required after consent is signed
   c) Guarantee of clinical improvement
   d) None of above

3) In therapeutic exploration phase no. of subject to be used is _____
   a) 20 – 50 b) 100 – 300
   c) 1000 – 3000 d) None of above

4) Idiosyncratic reaction occurs due to
   a) Excess dose of drug
   b) Genetically determined abnormal reaction
   c) Immunological reaction
   d) Characteristic toxic effect of drug at therapeutic dose

5) Therapeutic index is determined in which phase of clinical trial _____
   a) Phase I b) Phase II
   c) Phase III d) Phase IV

6) To minimise withdrawal symptom of morphine which drug is used ?
   a) Flumazenil
   b) Codeine
   c) Methadone
   d) Pethidine

7) Meta-analysis is to be carried out in
   a) In phase III trial
   b) Before clinical trail
   c) In post marketing serveliance
   d) All of above

8) The stage of pregnancy during which administered drug can produce deformities
   a) Fertilization
   b) Implantation
   c) Organogenesis
   d) Growth and development

9) Chemical present in smoke emitted by cigarette _____
   a) Increase activity of liver enzyme
   b) Decrease activity of liver enzyme
   c) Inhibit renal excretion of drug
   d) Promote renal excretion of drug

10) Parkinsonism is produced by antipsychotic drug, it is known as _____
   a) Iatrogenic
   b) Idiopatic
   c) Teratogenic
   d) Carcinogenic

11) Probenicid is co-administered with penicillin
   a) To reduced side effect of penicillin
   b) To enhance elimination rate of penicillin
   c) To prolong action of penicillin
   d) To promote absorption of penicillin

12) Which of following changes are commonly observed in elderly patient with regard to volume of distribution of drug _____
   a) Increase V_d of lipophilic and hydrophilic
   b) Decrease V_d of lipophilic and increase V_d of hydrophilic
   c) Decrease V_d of lipophilic and no change of V_d of hydrophilic
   d) Decrease V_d of hydrophilic of and increase V_d of lipophilic

13) A new drug molecule is first tested on

a) Healthy people b) Sick people

c) Animal d) None of above

14) Which of the following pair has interaction beneficial for routine clinical use ?

a) Pseudoephedrine and aluminium hydroxide gel

b) Tetracycline and milk of magnesia

c) MAO inhibitor and Tyramine

d) Chloramphenicol and Tolbutamide

15) Following must be done prior to the first patient being entered on a clinical trial except

a) Approval by an institutional review board

b) A written consent

c) Data analysis

d) Pharmacy process

16) Withdrawal symptoms are elicited by _____

a) Clonidine b) Benzodiazepam

c) TCA d) All of above

2. Answer **any four** : **(4×4=16)**

a) Write note on Meta-analysis.

b) What is therapeutic trial and explain it's type.

c) Write note on factor affecting drug interaction.

d) Explain briefly statistics used in clinical research.

e) Explain consequence of abrupt withdrawal of drug.

3. Answer the following : **(8×2=16)**

a) Explain individualization of drug therapy.

b) Discuss step involved in development of investigational new drug.

OR

b) Explain drug therapy in elderly and neonates.

4. Answer **any four** : **(4×4=16)**

   a) Write short note on drug therapy in pregnancy.

   b) Define and classify Adverse drug reaction, explain idiosyncrasy.

   c) Explain drug therapy in renal failure.

   d) Explain Pharmacoepidemiology in clinical trial.

   e) Discuss Ethical principle in clinical trials.

5. Answer the following : **(8×2=16)**

   a) Define and classify drug interaction. Explain pharmacokinetic drug interaction.

   b) Define Allergy, explain in detail type and source of allergy.

   OR

   b) Explain case control study of Myocardial infraction and COPD.

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Seat No.	

B.Pharm. (Semester – VI) Examination, 2016
PHARMACOGNOSY – II

Day and Date : Tuesday, 13-12-2016 Max. Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

Multiple choice questions : **(16×1=16 Marks)**

1. _____ is the small area of green tissue surrounded by the vein-lets.
   A) Epidermal cells B) Vein-termination
   C) Stomata D) Vein-islet

2. _____ belongs to Meliaceae family.
   A) Cotton B) Marihuana C) Indian Gum D) Margosa

3. Identify the trisaccharide.
   A) Raffinose B) Gentionose C) Both A and B D) Galactose

4. _____ is an example of pseudo tannin.
   A) Hirda B) Behda C) Ashoka D) Amla

5. Tetraterpenes contains _____ number of isoprene units.
   A) 2 B) 4 C) 8 D) 12

6. _____ is chemically inert.
   A) Sandrac B) Asafoetida C) Myrrh D) Colophony

7. Alcoholic extract of crude drug is treated with sodium hydroxide solution and few drops of light petroleum ether and shake, petroleum ether layer shows green flourescense. Identify the crude drug.
   A) Agar B) Black catechu C) Pale catechu D) Indian Gum

8. Senna contains _____ type of stomata.
   A) Paracytic B) Dicytic C) Anisocytic D) Anomocytic

P.T.O.

9. Vegetable gelatin is the synonym of
   A) Amylum B) Agar-agar C) Indium psyllium D) Gum arabica

10. Identify the crude drug containing carbohydrate fibre.
   A) Cotton B) Gunny C) Both A and B D) Silk

11. Identify the lipid not suitable for internal consumption.
   A) Cotton seed oil B) Shark liver oil
   C) Carnauba wax D) Cod liver oil

12. _____ is used in detection of boric acid.
   A) Indian Hemp B) Indian Mulberry C) Indian gum D) Indian saffron

13. _____ belongs to Bombycidae family.
   A) Neem B) Jute C) Tobacco D) Silk

14. Clove buds contain _____ type of oil glands.
   A) Schizogenous B) Schizoferous
   C) Schizolysigenous D) Pterocladus

15. _____ belongs to family Euphorbiaceae
   A) *Ricinus communis* B) *Triticum aestivum*
   C) *Oryza sativa* D) *Zea mays*

16. Peppermint oil belongs to _____ volatile oil.
   A) Ether B) Alcohol C) Ester D) Phenol

2. Answer **any four** of the following questions. **(4×4=16)**
   1) Write a note on camera lucida.
   2) Write qualitative chemical tests used for detection of fixed oil.
   3) Draw the neat labeled histological diagram of fennel fruit.
   4) Write chemical constituents and uses of :
      a) Himalayan May Apple
      b) Indian saffron.
   5) Define and classify volatile oils with suitable examples.

3. Answer **any two** of the following questions. **(2×8=16)**

   1. Write biological source, chemical constituents and uses of following with any one example.
      a) Used in perfume industry
      b) Belongs to Tiliaceae family
      c) As a narcotic property
      d) Alcohol volatile oil containing crude drug.
   2. Explain in detail *Terminalia* species.
   3. Discuss pharmacognosy of clove flower bud.

4. Answer **any four** of the following questions. **(4×4=16)**

   1) Define stomatal number. How it is determined ?
   2) What are natural fibers ? Write their uses in surgical dressings.
   3) Discuss merits of natural pesticides over the synthetic pesticide with suitable examples.
   4) How hydrolysable tannins are differentiated from phlobatannins ?
   5) Explain importance of menthol.

5. Answer **any two** of the following questions. **(2×8=16)**

   1) Define and classify carbohydrates. Write difference between gums and mucilages.
   2) Write the general biosynthetic pathway leading to various plant constituents.
   3) Write identification tests for :
      a) Silk
      b) Agar.

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Seat No.	

B. Pharmacy (Semester – VII) Examination, 2016
STERILE DOSAGE FORMS

Day and Date : Tuesday, 29-11-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

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

1. Choose the appropriate option. **(1×16=16)**

1) Z-Value in sterilization means
   a) Temp coefficient of microbial destruction
   b) Rate of microbial destruction
   c) Numbers of microbes surviving in load
   d) None of the above

2) In IM injection the angle of administration is _____ degrees.
   a) 45 b) 30 c) 90 d) 10

3) Compounding and filling operation for aseptic run can be done in _____ grade of environment.
   a) A b) C c) D d) None of the above

4) The diameter of membrane filter used in test for sterility is
   a) 58 mm b) 40 mm c) 47 mm d) 30 mm

5) Globule size used in parenteral emulsion should be
   a) 0.1-0.5 mm b) 0.5-5 mm
   c) 0.1-0.6 mm d) None of these

6) The instruction “NOT FOR USE IN NEONATES” is applicable for label of
   a) Sterile Water for Injection b) Water for Injection
   c) Sterile Purified Water d) None of these

7) DOP test is used to check the efficiency of
   a) HEPA filters b) Membrane filters
   c) Centrifuge d) None of these

8) _____ is used as biological indicator in steam sterilization.
   a) Bacillus Subtilis b) Bacillus sterothermophilus
   c) Bacillus Pumilis d) All of the above

9) Isotonicity of injections can be calculated by _____ method.
   a) Freezing point method b) Molar concentration method
   c) Fick's law d) Both a) and b)

10) In ophthalmic solutions _____ % of Boric acid is isotonic.
   a) 2.5 b) 0.9 c) 5 d) 1.9

11) Efficiency of HEPA filter in LAF is _____ %.
   a) 99.97 b) 98.09 c) 96.96 d) 95

12) What is the permitted limit of ethylene oxide in ophthalmic preparations ?
   a) 5 ppm b) 10 ppm c) 100 ppm d) 0.1 ppm

13) Cryoscopic method of isotonicity calculation is based on
   a) Freezing point depression b) Molar concentration
   c) Sodium chloride equivalent method d) None of the above

14) Type-II and Type-III glass contain _____ % of sodium.
   a) 1 b) 8 c) 14 d)81

15) In TPN how much % of dextrose is used ?
   a) 5-10% b) 30-40% c) 60-70% d) 2%

16) In USP _____ test for parenteral plastic containers is recommended.
   a) In-vivo biological reactivity test
   b) In-vitro biological reactivity test
   c) Both a) and b)
   d) Toxicity test

2. Answer **any four** : **(4×4=16)**
   1) Explain leakage test for ampoules and vials.
   2) Write routes of parenteral administration. Explain how these routes affect formulation design.
   3) What are do's and dont's in clean room ?
   4) Define isotonicity. What are the consequences of paratonicity ?
   5) Explain the procedure involved in Rabbit test.

3. Answer **any four** : **(4×4=16)**
   1) Explain types of plant layout.
   2) Explain the labelling requirements of parenteral.
   3) Describe the methods of preparation of water suitable for parenteral use.
   4) Explain the method of preparation of sterile solid by lyophilization
   5) What are the strategic objectives of plant layout ?

4. Answer **any two** : **(8×2=16)**
   1) Explain in detail different ophthalmic dosage forms.
   2) Define pilot plant and scale-up technique. Write in detail general considerations.
   3) Explain in detail the formulation of parenteral suspension and emulsion. Enlist their QC tests.

5. Answer **any two** : **(8×2=16)**
   1) Define sterilization. Explain the principle and methodology used in the test of sterility.
   2) Explain in detail the design of facilities in a pharma manufacturing plant.
   3) Explain in detail HEPA filter and laminar airflow system. Discuss the principle of working of HVAC.

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SLR-G – 36

Seat No.	

B.Pharmacy (Semester – VII) Examination, 2016
PHARMACEUTICAL JURISPRUDENCE

Day and Date : Thursday, 1-12-2016 Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

I. Choose the correct alternative : **(1×16=16)**

1) The Pharmacy Act extends to the whole of India except _____
   a) Jammu and Kashmir b) Kerala
   c) Goa d) None of above

2) Any person who falsely claims to be a registered pharmacist is liable to pay a fine of Rs. _____ on the first conviction as per the Pharmacy Act.
   a) 5,000 b) 500 c) 50 d) None of above

3) The Narcotics and Psychotropic Substances Act was passed in the year _____
   a) 1965 b) 1975 c) 1985 d) None of above

4) The following classes of drugs are prohibited to be imported into India as per the D and C Act, 1940.
   a) Misbranded b) Adulterated c) Spurious d) All of above

5) Drugs which are imitations or substitutes for other drugs are called as _____ drugs as per the D and C Act, 1940.
   a) Spurious b) Misbranded c) Adulterated d) None of above

6) The education regulation is published in official gazette by
   a) Ministry of education b) Central govt.
   c) Drug controller d) PCI

7) _____ is the Chairman of DTAB.
   a) Drug controller of India b) President PCI
   c) Director-general of health services d) None of above

8) There are no provisions for the import of _____ drugs as per the D and C Act, 1940.
   a) Ayurvedic b) Unani c) Siddha d) All of above

P.T.O.

9) Drugs controller of India is _____ member of DTAB as per the D and C Act, 1940.
   a) An Ex-officio b) A nominated
   c) An elected d) None of above

10) No license is necessary for effecting sale of _____ drugs as per the D and C Act, 1940.
   a) Allopathic b) Ayurvedic
   c) Homeopathic d) None of above

11) Cosmetics containing _____ ppm of arsenic is prohibited to be imported as per the D and C Act, 1940.
   a) 100 b) 20 c) 2 d) None of above

12) The following classes of drugs are prohibited to be sold India as per the D and C Act, 1940.
   a) Misbranded b) Adulterated
   c) Spurious d) All of above

13) A food article obtained from a diseased animal is called as _____ food article as per the Prevention of Food Adulteration Act.
   a) An adulterated b) A misbranded
   c) A spurious d) None of above

14) Drug (price control) order has been made under the Section _____ of the Essential Commodities Act, 1955.
   a) 1 b) 3 c) 10 d) None of above

15) For imported formulations the retail price shall not exceed _____ % of the landed cost as per DPCO.
   a) 20 b) 40 c) 50 d) None of above

16) Schedule _____ gives the standards for ophthalmic preparations.
   a) C b) H c) X d) FF

II. Answer **any four** : **(4×4=16)**

1) Highlight the objectives of Pharmacy Act. Add a note on maintenance of register by the State Pharmacy Councils.

2) Write the constitution of State Pharmacy Council and joint State Pharmacy Council.

3) Define the terms cocoa leaf, opium, charas and ganja as per the Narcotics and Psychotropic Substances Act.

4) Enlist the objectives of D and C Act. Define the term “drugs” and “cosmetics” as per the Act.

5) Explain the classes of drugs that are prohibited to be imported as per the D and C Act, 1940.

III. Answer **any four** : **(4×4=16)**

1) Enlist the objectives of the Narcotics and Psychotropic Substances Act. Add a note on cultivation of opium poppy.

2) Explain the classes of drugs that are prohibited to be imported as per the D and C Act, 1940.

3) Write a note on loan license and repacking license as per the D and C Act, 1940.

4) Enlist the objectives of the Drugs and magic remedies (objectionable advertisements) Act. Define the term “Magic remedy” as per the Act.

5) Enumerate the objectives of DPCO. How is the retail price of formulations calculated as per the Act ?

IV. Answer **any two** : **(8×2=16)**

1) Discuss the constitution and functions of Pharmacy Council of India.

2) Explain the classes of drugs that can be imported under a license or permit as per the D and C Act.

3) Highlight the conditions that should be fulfilled for obtaining a license for manufacture of Cosmetics as per the D and C Act. Add a note on the classes of cosmetics that are prohibited to be imported as per the Act.

V. Answer **any two** : **(8×2=16)**

1) Write the constitution of central committee for food standards as per the Prevention of Food Adulteration Act. Highlight the functions of central food laboratory.

2) Highlight the conditions that should be fulfilled for obtaining a license for manufacture of schedule X drugs as per the D and C Act.

3) Enlist the qualifications that are eligible for appointment as a government analyst as per the D and C Act. Highlight the duties of government analyst.

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SLR-G – 37

Seat No.	

B.Pharm. (Semester – VII) Examination, 2016
MEDICINAL CHEMISTRY – III

Day and Date : Saturday, 3-12-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

Instruction *:* ***All*** *questions carry* ***equal*** *marks.*

I. Multiple choice questions : **(1×16=16)**

1) The _____ benzodiazepine derivative contain triazole nucleus in its structure.
   a) Alprozolam b) Diazepam c) Nitrazepam d) None

2) The naturally occurring testosterone, estrogen and progestins contain _____ carbons in steroidal nucleus respectively.
   a) $C_{19}C_{18}C_{21}$ b) $C_{18}C_{19}C_{21}$ c) $C_{21}C_{19}C_{18}$ d) $C_{18}C_{21}C_{19}$

3) Fluxymesterone is modification of
   a) Estrogen b) Progesterone c) Testosterone d) None of the above

4) _____ is used in combination with nitrous oxide for anaesthesia.
   a) Codeine b) Fentanyl c) Naloxone d) Naltrexone

5) _____ belongs to flurobutyrophenone class of antipsychotic agent.
   a) Chloropromazine b) Diazepam
   c) Haloperidol d) Imipramine

6) Which of the followings is not morphine antagonist ?
   a) Naloxone b) Nalorphine c) Naltrexone d) Codeine

7) _____ is used as antigout agent.
   a) Phenylbutazone b) Acetaminophen
   c) Allopurinol d) Valdecoxib

8) The nomenclature of _____ is 2-(4-isobutyl phenyl) propionic acid.
   a) Ibuprofen b) Fenoprofen c) Ketoprofen d) None of the above

9) Sulphonamide group is present in
   a) Valdecoxib b) Rofecoxib c) Paracetamol d) Etodolac

P.T.O.

10) _____ is not tricyclic antidepressant.
a) Imipramine b) Amitriptyline c) Nortriptyline d) Paroxetine

11) _____ is used as central sympathomimetic or psychomotor stimulant.
a) Chlorpromazine b) Phenytoin
c) Fenfluramine d) Fentanyl

12) The _____ is opioid receptor.
a) α b) β c) γ d) μ

13) Removal of 3, 4 epoxide bridge in morphine structure result in _____ class of compound.
a) Morphinans b) Meperidine c) Methadone d) None of the above

14) _____ is non sedative H_1-antihistamine.
a) Diaphenhydramine b) Chlorpheniramine molecule
c) Cetrizine d) Cimetidine

15) Meclizine contains _____ nucleus in its structure.
a) Indole b) Phenanthrene c) Piperazine d) Thiazine

16) Phenyl butazone belongs to _____ class of NSAIDS.
a) Salicylic acid b) Anthranillic acid
c) Oxicams d) Pyrazolidinedione

II. Answer **any four** of the followings : **(4×4=16)**

a) Classify barbiturates with examples and write the synthesis of pentobarbital.
b) Add a note selective Cox – II inhibitors with examples.
c) Write the S.A.R. of phenothiazines.
d) Add a note on methylxanthenes with examples.
e) Add a note on proton pump inhibitors.

III. Answer **any four** of the followings : **(4×4=16)**

a) Write about antigout agents.
b) What are androgens ? Discuss the S.A.R. of testosterone.
c) Add a note on morphine antagonists.
d) Write about tricyclic antidepressants.
e) Add a note on oral contraceptives.

IV. Answer **any two** of the followings : **(2×8=16)**

a) Classify NSAIDS with suitable examples write the MOA and write the synthesis of ibuprofen.

b) Classify H_1 antagonists with suitable examples write the S.A.R. and write the synthesis of diaphenhydramine.

c) Add a note on adrenocorticoids and write the S.A.R.

V. Answer **any two** of the followings : **(2×8=16)**

a) Add a note on development on morphine molecule with examples in obtaining tetracyclic, tricyclic ring systems.

b) Explain in detail about female sex harmones.

c) Classify anticonvulsants with examples write the MOA of hydantoins and write the synthesis of phenytoin.

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SLR-G – 38

Seat No.	

B.Pharm. (Semester – VII) Examination, 2016
PHARMACEUTICAL ANALYSIS – V

Day and Date : Tuesday, 6-12-2016 Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

I. Multiple choice questions : **16**

1) Choose the correct equation that correlates column efficiency and length of column.
   a) N = L/H b) N = H/L c) H = N/L d) L = H/N

2) Which of the following is not a chromatographic development technique ?
   a) Electrophoresis b) Frontal analysis
   c) Displacement analysis d) Elution

3) Paper chromatography is based on predominantly _____ mechanism.
   a) Absorption b) Partition c) Adsorption d) Adhesion

4) C 18 columns are generally used in _____ chromatography.
   a) Normal phase b) Ion pair
   c) Reverse phase d) Size-Exclusion

5) Following are detectors used in HPLC except _____
   a) UV-Visible b) Mass spectrometry
   c) RI d) Katharometer

6) _____ is not a development technique used in TLC.
   a) Ascending b) Descending
   c) Ascending and descending d) Horizontal

7) _____ is not a planar chromatographic technique.
   a) Paper chromatography b) HPTLC
   c) TLC d) GLC

8) _____ reagent is used to visualize amino acid sample.

a) Ferric chloride b) Iodine c) Ninhydrin d) Nitric acid

9) _____ is not a detector for GC.

a) ECD b) Hot wire detector

c) Fluorescence detector d) Mass spectrometry

10) The mobile phase flow rate of a HPLC system is generally _____ ml/minute.

a) 1 – 2 b) 0.1 – 0.2 c) 5 – 6 d) 6 – 10

11) In liquid chromatography post column Derivatization is performed to _____

a) Increase resolution b) Improve detection

c) Decrease band broadening d) All of the above

12) In exclusion chromatography separation of solute is based on

a) Charge of solute b) Chemical nature of solute

c) Size of solute d) Solubility of solute

13) Water demineralisation is based on _____ chromatography.

a) Gel b) HPLC c) HPTLC d) Ion exchange

14) GLC employs a _____ mobile phase and a _____ stationary phase.

a) Liquid and solid b) Liquid and gas

c) Gas and liquid d) Gas and solid

15) Zeolite is used as stationary phase in _____ chromatography.

a) Gas-solid b) Gas-liquid

c) Ion exchange d) Gel

16) The commonly used binder in TLC is _____

a) Calcium carbonate b) Calcium hemihydrate

c) Calcium sulphate d) Calcium hydroxide

II. Answer **any four** of the following questions : **(4×4=16)**

1) Explain different development techniques in TLC.
2) Define chromatography. Explain what is meant by head space analysis in GC.
3) What is ion exchange chromatography ? Classify ion exchangers used in Ion Exchange Chromatography.
4) Explain in short visualization techniques in TLC.
5) Give the applications of HPLC.

III. Answer **any four** of the following questions : **(4×4=16)**

1) Differentiate between TLC and HPTLC.
2) Explain the theory of size exclusion chromatography.
3) Write on factors affecting Rf value.
4) Give the applications of Ion Exchange Chromatography.
5) Explain HETP in detail.

IV. Answer **any two** of the following questions : **(2×8=16)**

1) With a neat labeled diagram explain instrumentation of HPLC.
2) Explain plate theory and rate theory of chromatography.
3) Explain with suitable diagram any four detectors used in GC.

V. Answer **any two** of the following questions : **(2×8=16)**

1) Explain in detail paper chromatography.
2) Explain any two detectors used in HPLC. Give applications of gel chromatography.
3) Define the terms Reverse phase chromatography, Gradient elution, Retention time and Retention factor. Explain Van Demeter equation.

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SLR-G – 39

Seat No.	

B.Pharm. (Semester – VII) Examination, 2016
PHARMACOLOGY – III

Day and Date : Thursday, 8-12-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

1. MCQs : **(1×16=16)**

1) Oral hypoglycaemic drug that do not cause insulin release
   a) Glipizide b) Metformin c) Piogliatzone d) Nateglinide

2) Which one of the following is a Selective COX-2 inhibitor ?
   a) Aspirin b) Dilcofenac c) Celecoxib d) Paracetamol

3) _____ folate antagonist is a potent immonosuppresant.
   a) Glucocorticoid b) Methotrexate
   c) Cyclophosphamide d) Tacrolimus

4) Heroin is a
   a) Synthetic Narcotic b) Di-acetyl Morphine
   c) Used as a cough suppressant d) All of the above

5) The class of drug not acting as anti Parkinson is
   a) Dopamine precursor b) MAO-B inhibitors
   c) COMT inhibitors d) Serotonin reuptake inhibitors

6) Aldehyde dehydrogenase inhibitor, _____ is used in chronic alcoholics.
   a) Ondansetron b) Disulfiram c) Naltrexone d) Acamprostate

7) Benzodiazepines do not have one of following actions
   a) General depression b) Anxiolytic
   c) Anticonvulsant d) Skeletal muscle relaxation

8) _____ is specific antidote for Acute morphine poisoning.
   a) Naloxone b) Methadone c) Tramadol d) All of the above

9) 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

10) Morphine is avoided in _____ pain.
   a) Cancer b) Burn
   c) Myocardial infarction d) Dental

11) Novopen is an example of human insulin produced by
   a) Pneumatic drying b) Transgenic
   c) Recombinant DNA technology d) None of the above

12) _____ is the most commonly used analgesic where anti-inflammatory action is not required.
   a) Paracetamol b) Aspirin
   c) Nimesulide d) Ketorolac

13) Drug used for phobic states
   a) Carbidopa b) LSD c) Propranolol d) Fluoxetine

14) Medullary paralysis stage in anesthesia is characterized by
   a) Pin point meiosis b) Cessation of breathing
   c) Delirium d) Increased muscle tone

15) Strychnine is potent
   a) Sympathomimetic b) Anticonvulsant
   c) Convulsant d) None of the above

16) The depressant effect of alcohol is due to inhibition of
   a) Glutamate b) .5HT c) GABA d) None

2. Answer **any four** of the following : **(4×4=16)**

   1) What are the properties for ideal anesthetic agent ?
   2) Classify the antidepressants based on mechanism of action with examples.
   3) Discuss the use of immuno-suppressants in organ transplantation.
   4) Classify the anti-Parkinsonian drugs based on mechanism of action with examples.
   5) Write a note on treatment of acute barbiturate poisoning.

3. Answer **any four** of the following : **(4×4=16)**

   1) Classify anti-Thyroid drugs. Briefly discuss Iodide.
   2) Write a note on treatment of Methanol poisoning.
   3) Discuss the mechanism of action and uses of Phenytoin.
   4) Explain the adverse effects and uses of Aspirin.
   5) Write a note on Psychosis. Briefly explain Bipolar depression.

4. Answer **any two** of the following : **(8×2=16)**

   1) Classify Benzodiazepines. Explain in detail the pharmacology of Diazepam. Give reasons why Benzodiazepines have gained popularity over Barbiturates for hypnotic and sedative actions.

   2) Discuss in detail the mechanism of action and complete pharmacology of Ethanol.

   3) Define Psychosis. Classify anti-Psychotics. Explain the pharmacology of Chlorpromazine.

5. Answer **any two** of the following : **(8×2=16)**

   1) Describe the pharmacology of Sodium. Valproate by giving its spectrum of activity, mode of action and adverse effects and uses.

   2) Classify the different oral hypoglycemic agents. Give the mechanism of action, adverse effects and contraindications of newer generation of sulfonylurea's.

   3) Define anesthesia. Explain in detail the different stages of anesthesia. Discuss the advantages of gaseous anesthetics.

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SLR-G – 40

Seat No.	

B. Pharmacy (Semester – VII) Examination, 2016
PHARMACOGNOSY – III

Day and Date : Saturday, 10-12-2016 Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple Choice Questions (MCQ)/Objective type questions. **(1×16=16)**

1) Papaverine, narcotine and narceine is under the chemical class
   a) Quinoline b) Benzyl isoquinoline
   c) Isoquinoline d) Benzophenone

2) In UV light Ergot shows fluorescence
   a) Yellow b) Blue c) Red d) Violet

3) Glycoside present in stychnous nux vomica
   a) Strychnine b) Brucine c) Ajmaline d) Loganine

4) Thalleoquin test is used for identification of
   a) Atropine b) Vincristine c) Quinine d) Strychnine

5) Senna mainly contains
   a) O-glycosides b) N-glycosides c) C-glycosides d) S-glycosides

6) Identify Drug under the class of isothiocyanate glycosides
   a) Black mustard b) Senega c) Thevetia d) Aloe

7) Saponin glycoside shows one of the following property
   a) Laxative b) Anticonvulsant
   c) Foaming d) Astringent

8) Identify Drug is an example of amino alkaloid
   a) Ephedrine b) Aconine c) Caffeine d) Theophylline

9) Which is not the chemical constituent naturally obtained from Opium ?
   a) Morphine b) Codeine
   c) Narcotine d) Heroine

10) Van-Urk's reagent chemically is
   a) P-dimethylaminobenzaldehyde b) Benzoic acid + Cinnamic acid
   c) P-dimethylbenzoic acid d) Cinnamaldehyde

11) Cephaelis Ipecacuanha belongs to family
   a) Rubiaceae b) Liliacaceae
   c) Apocyanaceae d) Rutaceae

12) Which species of cinchona contains highest percentage alkaloid ?
   a) Cinchona succirubra b) Cinchona officinalis
   c) Cinchona calisaya d) Cinchona ledgeriana

13) *Andrographis paniculata'* is the botanical source of
   a) Kalmegh b) Chirata c) Vasaka d) Ergot

14) *Acanthella acuta'* contains Acanthellin – I obtained from
   a) Red algae b) Gorgonian coarls
   c) Marine sponge d) Brown algae

15) Isoflavone glycosides are present in
   a) Mustard b) Citrus peel c) Soya bean d) Ginkgo

16) Following are the anticancer marine drugs except
   a) Ara – C b) Crassin acetate
   c) Xenia d) Manolide

2. Answer **any four** : **(4×4=16)**

1) What are Isothiocynate glycosides ? Give source, chemical constituents and uses of crude drug containing Sinigrin.

2) Write the biological source, method of preparation and uses of Streptokinase.

3) Explain any two anti-inflammatory compounds from marine origin.

4) Explain Ginkgo leaves with respect to its source and medicinal uses.

5) Give biological source and uses of :
   i) Lobelia ii) Ergot

3. Answer **any four** : **(4×4=16)**

1) What are Bitter glycosides ? Give biological source, family, chemical constituents and uses of Kalmegh.

2) Give the source and uses of :
   i) Soya bean ii) Citrus peel
3) What are Tropane alkaloids ? Give specific chemical test to identify same.
4) Explain any two cytotoxic compounds from marine source.
5) Explain following chemical tests :
   i) Van Urk's test ii) Modified Borntrager's test

4. Answer **any two** : **(8×2=16)**
   1) Give the method of preparation and uses of :
      i) Urokinase ii) Bromelin
   2) Explain Rauwolfia under the Pharmacognostical scheme.
   3) Discuss Foxglove leaves under Pharmacognostical scheme.

5. Answer **any two** : **(8×2=16)**
   1) Write a note on cardiovascular compounds from marine origin.
   2) Discuss Nux vomica under Pharmacognostical scheme.
   3) Discuss Pharmacognosy of Tinnevally Senna.

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Seat No.	

B.Pharmacy (Semester – VIII) Examination, 2016
NOVEL DRUG DELIVERY SYSTEMS

Day and Date : Wednesday, 30-11-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

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

1. Choose the appropriate option : **(1×16=16)**

1) In stabilized foam aerosol system propellent is present in
   a) Internal phase b) External phase
   c) At the interface d) All of these

2) Which DDS is applicable for the drug which is having fist-pass metabolism ?
   a) Transdermal b) Oral c) Floating d) Mucosal

3) Is used in ultrasonocation equipment ?
   a) Quartz b) Silicon dioxide
   c) Barium tri-nitrate d) All of these

4) Hydrophilic matrices are known as
   a) Swellable systems b) Non-swellable systems
   c) Insoluble plastic systems d) All of these

5) Which model is more suitable to describe drug release by diffusion mechanism ?
   a) Zero-order b) First-order
   c) Both a and b d) Higuchi model

6) Which part if GIT is a host of numerous bacteria's ?
   a) Stomach b) Small intestine
   c) Duodenum d) Colon

7) Which model fitting is more suitable for describing the drug release kinetics from a matrix system containing water soluble drug ?
   a) Zero order b) First order
   c) Higuchi model d) Hixon-cruel model

P.T.O.

8) Loading dose responsible for
   a) Steady state plasma concentration b) Minimum effective concentration
   c) Both a and b d) Maximum toxic concentration

9) A system that releases the drug after some time but not promptly after administration is known as
   a) Sustained release
   b) Delayed release
   c) Immediate release
   d) Mechanical activated drug delivery system

10) Lupron implant is an example of
   a) Erodible implant b) Implant pump
   c) Both a and b d) None of these

11) For maximum bioavailability drug should be targeted in the vicinity of
   a) Stomach b) Small intestine
   c) Large intestine d) Colon

12) The stratum corneum is hard to penetrate because of
   a) High concentration of keratin b) High concentration of melanin
   c) Presence of hair follicles d) Presence of sweat glands

13) Which DDS is applicable for the drug which get absorbed at 1.2 pH ?
   a) Transdermal b) Oral c) Floating d) Parenteral

14) Suspension aerosol for MDI water content should be NMT
   a) 300 PPM b) 200 PPM c) 100 PPM d) 50 PPM

15) Which DDS is more suitable for the drug candidate having class IV as per biopharmaceutical classification ?
   a) Transdermal b) Oral c) Mucosal d) Parenteral

16) Cascade impactor is useful for the determination of aerosols
   a) Particle size b) Spray pattern
   c) Pressure d) Flash point

2. Answer **any four** : **(4×4=16)**
   a) Give the release monograph for sustained release tablets.
   b) Give details of solution and suspension type of aerosol.
   c) Elaborate Higuchi and first order release kinetics model.
   d) Simplify ion-exchange drug delivery systems.
   e) How Resealed Erythrocytes can be utilized as a drug delivery system ?

3. Answer **any four** : **(4×4=16)**
   a) Furnish the manufacturing techniques of aerosol.
   b) Explain the system which can bypass first pass metabolism.
   c) Discuss externally modulated systems.
   d) Discuss liposomes as a DDS.
   e) Explain different classes of polymers.

4. Answer **any two** : **(8×2=16)**
   a) Explain gastro retentive drug delivery systems in detail.
   b) Discuss evaluation of pharmaceutical aerosol.
   c) Discuss osmotically controlled systems in detail.

5. Answer **any two** : **(8×2=16)**
   a) Discuss the properties to be considered before choosing the drug candidate for NDDS.
   b) Explain different approaches of colon targeted drug delivery systems with the effect of GI environment.
   c) Explain the different components present in pharmaceutical aerosols.

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Seat No.	

B.Pharmacy (Semester – VIII) Examination, 2016
PHARMACEUTICAL BUSINESS MANAGEMENT

Day and Date : Friday, 2-12-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

I. Choose the correct alternative : **(1×16=16)**

1) Which of the following are sources of recruitment ?
   a) Journal advt. b) Newspaper advt.
   c) Campus interviews d) All of these

2) _____ is an art and science of getting the work done through people with satisfaction for employer and employee and public.
   a) Planning b) Management c) Both a and b d) None

3) Marketing is science and art of exploring, creating and delivering value to satisfy needs of
   a) Customer b) Retailer c) Wholesaler d) Manufacture

4) The activity of determining and satisfying wants in a systemic manner is called as
   a) Marketing mix b) Marketing research
   c) Both a and b d) None of these

5) The growing population of a country indicates a growing _____ for consumer.
   a) Medicine b) Vehicle c) Market d) None of these

6) _____ is a process of dividing a potential market into distinct subjects and consumer with common characteristics.
   a) Marketing mix b) Marketing research
   c) Market segmentation d) None of these

7) After the medicine loses its patent protection, copies in _____ can be manufactured.
   a) Raw material b) Generic products
   c) Branded products d) All of these

8) Final stage in the life cycle of products is
   a) Introduction b) Growth c) Decline d) Maturity

P.T.O.

9) The product familiarization program also called as
   a) Seeding program b) Forwarding program
   c) Wedding program d) None of these

10) _____ involves direct communication between sellers and potential customer.
   a) Advertising b) Publicity
   c) Sales promotion d) Personal selling

11) A firms marketing mix would not include
   a) Product b) Price c) Profit d) Promotion

12) A company has modified and enlarged its product line to meet the changing needs of its current customers. This is example of
   a) Market development b) Market penetration
   c) Both a and b d) Product development

13) The maximum number of partners allowed in a general business.
   a) Ten b) Twenty
   c) Fifty d) None of the above

14) The maximum number of partner allowed in case of a banking firm is
   a) 10 b) 20 c) 15 d) 25

15) The Branch Managers comes in
   a) Top level management b) Middle level management
   c) Lower level d) Highest level

16) Aptitude test is given to evaluate the capacity of a candidate to learn
   a) Particular skill b) Mental alertness
   c) Both a and b d) None of these

II. Answer **any four** : **(4×4=16)**

1) Write in a brief advantages and disadvantages of market research.
2) Explain in a brief components of marketing mix.
3) Explain in detail planning process.
4) Give a brief account of Joint Hindu Family Business.
5) Explain pharmaceutical market in India.

III. Answer **any four** : **(4×4=16)**

1) Discuss marketing research procedure in detail.
2) Discuss the importance of wholesalers in Pharmaceutical industry.
3) What do you know about branding ? Discuss the various brands.
4) Explain the importance of decision making in an organization.
5) Write a brief note on Training.

IV. Answer **any two** : **(8×2=16)**

1) Explain the term leadership. Write its salient features and its importance.
2) Enumerate the principle channels of distribution of goods from producers to consumer. Describe in detail various types of middlemen.
3) Discuss in detail product life cycle.

V. Answer **any two** : **(8×2=16)**

1) Define management and explain various functions of managements.
2) Explain the role of professional sales representatives in the marketing of drug products.
3) Discuss sole proprietorship as a form of business organization.

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Seat No.	

B.Pharm. (Semester – VIII) Examination, 2016
MEDICINAL CHEMISTRY – IV

Day and Date : Monday, 5-12-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

1. Multiple choice questions : **(16×1=16)**

1) Which of the following are prodrug except
   A) Dipivefrin
   B) Omeprazole
   C) Clonidine
   D) Chloramphenicol palmitate

2) Which of the following drugs is tropine ester of racemic tropic acid and is optically inactive ?
   A) Hyoscyamine B) Atropine C) Scopolamine D) None of these

3) Calcium antagonists act only on _____ type channel to produce pharmacological effects.
   A) T B) N C) L D) P

4) _____ is a HMG-CoA reductase inhibitor.
   A) Lovastatin B) Propranolol C) Warfarin D) Procainamide

5) _____ is a erythro racemate.
   A) Ephedrine B) Pseudoephedrine
   C) Epinephrine D) (A) and (B)

6) _____ is a aminoalcohol ester class of cholinergic blocking agent.
   A) Cyclopentolate B) Dicyclomine
   C) (A) and (B) D) None of these

7) _____ prodrug does not contain a carrier or promoiety.
   A) Bioprecursor B) Mutual C) Chemical D) All of these

8) Which of the following heterocyclic rings is present in Reserpine drug ?
   A) Indole B) Benzimidazole
   C) Imidazole D) Pyrrole

9) _____ is a neuromuscular blocking agent.
   A) d-tubocurarine B) Atracurium
   C) Doxacurium D) All of these

P.T.O.

10) _____ is a precursor used for synthesis of catecholamines.
A) Leucine B) Tyrosine C) Serine D) Isoleucine

11) Which of the following is not a cholinergic agent ?
A) Methacholine B) Carbachol
C) Bethanechol D) Epinephrine

12) Which of the following drugs is a sulfhydryl group containing ACE inhibitor ?
A) Fosinopril B) Captopril
C) Enalapril D) Quinapril

13) Organic nitrates, nitrites and nitroso compounds produce vasodilation effect by generating or releasing _____ in situ.
A) NO B) NO_2^+ C) N_2O D) N_3O

14) IUPAC nomenclature of Minoxidil drug is
A) 2, 6-diamino-6- piperidino pyrimidine-3-oxide
B) 2, 5-diamino-6-piperidino pyrimidine-3-oxide
C) 2, 3-diamino-6-piperidino pyrimidine-3-oxide
D) 2, 4-diamino-6-piperidino pyrimidine-3-oxide

15) Sugar moiety is attached to the _____ position of the steroidal nucleus of cardiac glycoside.
A) C-2 B) C-16 C) C-3 D) C-14

16) _____ is a aryloxypropanolamine derivatives of beta blocking agent.
A) Propranolol B) Practolol
C) Pindolol D) All of these

2. Answer **any four** of the following questions : **(4×4=16)**

1) Give synthesis and uses of Salbutamol.
2) Define prodrug with suitable examples. Give its advantages.
3) Define and classify with suitable example antihyperlipidemics.
4) Write a note on nitrovasodilators.
5) Write the structure and therapeutic uses of atropine.

3. Answer **any two** of the following questions : **(2×8=16)**

1) What are sympathomimetics ? Give its classification. Give SAR of direct acting sympathomimetics.
2) Draw the structures, synthesis and uses of Dicylomine and Nifedipine.
3) Write SAR of beta adrenergic receptor antagonist. Write on non-selective beta blockers.

4. Answer **any four** of the following questions : **(4×4=16)**
   1) Write a note on neuromuscular blocking agent.
   2) Explain in short any one physicochemical parameter studied in QSAR.
   3) Define and classify antiarrhythmic agents.
   4) Write in short on irreversible cholinesterase inhibitors.
   5) Give structure and uses of ephedrine.

5. Answer **any two** of the following questions : **(2×8=16)**
   1) Define and classify anticholinergics. Give its SAR.
   2) Write in detail on ACE inhibitors.
   3) Write in detail on calcium antagonist.

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Seat No.	

B.Pharm. (Semester – VIII) Examination, 2016
PHARMACEUTICAL ANALYSIS – VI

Day and Date : Wednesday, 7-12-2016 Max. Marks : 80

Time : 3.00 p.m. to 6.00 p.m.

1. Multiple Choice Questions : **(16×1=16)**

1) When nuclei having magnetic properties is kept under external magnetic field it will

A) Precess B) Vibrate

C) Not precess D) Not influenced by the field

2) _____ NMR instrument is cheaper and widely used.

A) Frequency sweep B) Field sweep

C) Fourier transform D) A) and B)

3) _____ low pressure (vacuum system) is used and is a characteristic feature of mass spectrometer.

A) 10^{-4} to 10^{-8} torr B) 10^{-2} to 10^{-4} torr

C) 10^{-10} to 10^{-14} torr D) 10^{-9} to 10^{-15} torr

4) _____ packaging material is a material which comes in direct contact with contents.

A) Primary B) Tertiary C) Secondary D) All of these

5) _____ is not a component of mass instrument.

A) Sample inlet system B) Mass analyzer

C) Magnet D) Detector

6) No. of signals in NMR spectrum for the molecule $CH_3 – CHBr – CH_3$ are

A) Three B) Two C) Four D) One

7) _____ is desorption type of ion source used in mass spectrometer.

A) Electron impact B) Field desorption

C) Fast atom bombardment D) B) and C)

8) The space between the doublet is called as

A) Co-coupling constant B) Co-constant

C) Coupling constant D) Radical constant

P.T.O.

9) _____ is that part of QA, which ensure that products are consistently produced and controlled to the quality standards appropriate to their intended use and as required by the marketing authorization.
   A) GMP B) Quality Control
   C) Quality Management D) None of these

10) The peaks that occurs at mass to charge ratios greater than that of the molecular ion is called as
   A) Fragment ion B) Rearrangement ion
   C) Isotope ion D) Metastable ion

11) _____ are the steps involved in equipment validation.
   A) Preparation of design qualification B) Installation qualification
   C) Performance qualification D) All of these

12) Which of the following is not a component of quality management system ?
   A) Quality assurance B) Equipment validation
   C) cGMP D) Quality control

13) The arithmetic mean for the given values is _____
   Values : 10, 20, 25, 35 and 40.
   A) 26 B) 22 C) 28 D) 24

14) Multiplicity of the NMR peak in NMR spectrum is calculated by the formula
   A) M + 1 B) M + 2 C) N + 1 D) N + 2

15) Which of the following packaging material, folding endurance test is done ?
   A) Glass B) Rubber closure
   C) Aluminium foil D) Paper

16) _____ is used as matrix in MALDI.
   A) Nicotinic acid B) Vanillic acid
   C) Caffeic acid D) All of these

2. Answer **any four** of the following questions : **(4×4=16)**

1) Write on McLafferty rearrangement.
2) Give principle involved in NMR spectroscopy.
3) Write on t-test.
4) Write on hydrolytic resistance test and folding endurance test.
5) Write in short on equipment validation.

3. Answer **any two** of the following questions : **(2×8=16)**
   1) Explain in detail on various parameters used in validation of analytical method by UV method.
   2) Give types of ion sources used in mass spectrometry. Explain any two of it.
   3) Explain with suitable examples spin-spin coupling.

4. Answer **any four** of the following questions : **(4×4=16)**
   1) Give applications of mass spectrometry.
   2) Define Quality assurance and Quality control.
   3) Write a note on coupling constants with suitable examples.
   4) Write on process validation.
   5) Define with suitable examples mean and mode.

5. Answer **any two** of the following questions : **(2×8=16)**
   1) Explain any two mass analyzer used in mass spectrometry.
   2) Enlist factors affecting chemical shift. Explain anisotropic effect.
   3) Explain bursting strength and grammage test for packaging material. Write on f-test.

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Seat No.	

B.Pharm. (Semester – VIII) Examination, 2016
PHARMACOLOGY – IV

Day and Date : Friday, 9-12-2016 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

N.B. *: Solve **all** questions.*
*Select **one** most appropriate out of **four**.*

1. Multiple choice questions : **(1×16=16)**

1) Drug used alone to treat lower urinary tract infection.
   a) Carbenicillin b) Nitrofurantoin
   c) Imipenem d) Cefapine

2) Bactericidal action of penicillin is by
   a) By binding to specific 30 S ribosomal subunit
   b) By forming drug associated pores in the cell membrane
   c) By inhibition of terminal transpeptidation stage of cell wall synthesis
   d) By binding to 50S ribosomal subunit, inhibit transpeptidation reaction

3) Which sulfonamide is used in combination with pyrimethamine to treat chloroquine resistant Plasmodium falciparum ?
   a) Salfasalazine b) Sulfadiazine
   c) Sulfadoxine d) Sulfisoxazole

4) Which tetracycline is used to treat meningococcal infection ?
   a) Minocycline b) Oxytetracycline
   c) Doxycycline d) Chlortetracycline

5) The most common adverse effect encountered by isoniazid if pyridoxine is not added into the therapy of tuberculosis.
   a) Optic neuritis b) Peripheral neuritis
   c) Skin rashes d) Jaundice

6) Quartan Tertian (QT) type of malaria is caused by
   a) Plasmodium ovale b) Plasmodium vivax
   c) Plasmodium malariae d) Plasmodium falciparum

7) Drugs used to treat severe form of Chloroquine resistant Plasmodium falciparum infection.
   a) Mefloquine b) Primaquine
   c) Atovaquone d) Artemissinins

8) Ivermectin is used as a drug of choice to treat infection of
   a) Strongyloid stercolaris b) Ankylostoma duodenale
   c) Enterobious vermicularis d) Lymphatic filiariasis

9) Drug used to treat asymptomatic intestinal amoebiasis.
   a) Metronidazole b) Diloxanide furoate
   c) Tinidazole d) Tetracycline

10) Didanosine is a
   a) Protease inhibitor b) Integrase inhibitor
   c) NRTI d) NNRTI

11) Vitamin D analogue used to treat “chronic plaque psoriasis.”
   a) Calcitriol b) Tacalcitol
   c) Calcipotriene d) None of these

12) The drug is used to treat “nodular acne vulgaris”.
   a) Isotretinoin b) Tazorotene
   c) Acitretin d) Tretinoin

13) Agent used to treat influenza A and B viral infection.
   a) Osteltramir b) Raltegramir
   c) Ribavirin d) Lamivudine

14) In which bioassay graded dose response relationship is employed to determine potency ?
   a) Insulin b) Heparin
   c) Acetylcholine d) d-tubocurarine

15) The drug “Bendamustine” is from which subtype of alkylating agent.
   a) Methylhydrazine b) Nitrogen mustard
   c) Nitrosurea d) Triazine

16) The ratio of Trimethoprim to Sulphamethoxazole in “Cotrimazole”.
   a) 1 : 4 b) 1 : 5
   c) 1 : 2 d) 1 : 3

2. Answer **any four** : **(4×4=16)**
   1) Mechanism of action, adverse effects and therapeutic uses of "Tetracycline".
   2) Write principles of Cancer chemotherapy.
   3) Describe various misuses of antimicrobial agents.
   4) Write on drugs used in "Glaucoma".
   5) a) Explain drug interactions and indications
      1) Rifampicin + HMG CoA inhibitor.
      2) Warfarin + Isoniazid.
      b) Write a note on "Topical sulfonamide".

3. Answer **any four** : **(4×4=16)**
   1) Write pharmacology of "Cotrimazole".
   2) Write drug therapy used to treat "Acne vulgaris".
   3) Write on "Antimicrobial resistance".
   4) Write on pharmacotherapy for "Psoriasis".
   5) Classify antitubercular agents with examples.

4. Answer **any two** : **(8×2=16)**
   1) Write principles of bioassay and describe bioassay of Insulin.
   2) Classify antiviral agents with examples and add a note on "Zidouvidine".
   3) Classify antifungal agents with examples and add a note on "Amphotericin B".

5. Answer **any two** : **(8×2=16)**
   1) Write on various types of bioassay and their applications. Describe bioassay of d-tubocurarine.
   2) Classify entineoplastic agents with examples and add a note on "Cyclophosphamide".
   3) Explain :
      a) Why combination therapy is suggested to treat tuberculosis ?
      b) Why tetracycline is contraindicated in Pregnancy ?
      c) Write a note on "Antipseudomonal penicillins.
      d) Write mechanism of action of "Quinolones".

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Seat No.	

B. Pharmacy (Semester – VIII) Examination, 2016
HERBAL TECHNOLOGY

Day and Date : Tuesday, 13-12-2016 Total Marks : 80

Time : 3.00 p.m. to 6.00 p.m.

1. Multiple Choice Questions/Objective Type Questions : **(1×16=16)**

1) Determination of particle size (80-100 mesh) or 40-60 mesh is a parameter in quality control of

a) Vati b) Bhasma

c) Churna d) Taila

2) The inadequate post-harvest processing results in

a) Low quality raw material

b) Loss of active ingredients

c) Increased microbial load and bad commercial presentation

d) All the above

3) 'Chyavanprasha' is well known example of

a) Pishti b) Gutika

c) Avaleha d) None of the above

4) Cosmetic preparations used for the attractive, healthy looking hair, capable of giving life, softness, silky touch, control of flyaway and ease of styling are called as

a) Humectant b) Hair conditioners

c) Hair colorants d) None

5) *Acacia concinna* (Shikakai) is used in the preparation of shampoo for its

a) Detergent and conditioning property

b) Antioxidant property

c) Antiseptic property

d) None

6) Increased chance of adulteration, difficulty in developing standards and overlapping of chemical and chromatographic profiles are the demerits of
   a) Monoherbal preparation
   b) Polyherbal preparation
   c) Both mono and polyherbal preparation
   d) None

7) Fermentation in Asava/Arista is brought about by the addition of a source of sugar with
   a) *Woodfordia fruticosa* flowers b) *Zingiber officinale*
   c) *Santalum album* d) None

8) Ideal time for collection of roots and rhizomes is
   a) At the end of the vegetation period
   b) In the spring
   c) At the flowering stage
   d) None of the above

9) If Ashwagandha root extract is incorporated as an active ingredient while manufacturing tablet/capsule or suitable dosage form with the aid of excipients, then it is called as
   a) Monoherbal preparation b) Polyherbal preparation
   c) Multiherbal preparation d) None

10) The powdered form of the substances, obtained by calcination of metals minerals or animal products
   a) Vati b) Bhasma c) Pishti d) Taila

11) Disintegration time and weight variation are the quality control tests for
   a) Vati b) Bhasma c) Pishti d) Taila

12) Less chances of toxicity, less chances of transformations and less chances of adulteration are the merits of
   a) Monoherbal preparation
   b) Polyherbal preparation
   c) Both mono and polyherbal preparation
   d) None

13) In the quality control for hair dyes, net content, ash value, pH and effect on hard water are considered as

a) Performance test b) Physiological test

c) Physico-chemical test d) All the above

14) Arishtas are made with

a) Decoctions of herbs in boiling water

b) Directly using fresh herbal juices

c) Both (a) and (b)

d) None of the above

15) Infusions are normally prepared for

a) Immediate use b) Prolonged use

c) Both (a) and (b) d) None

16) Substances added to prevent drying out of cosmetics are called as

a) Surfactant b) Humectant

c) Preservative d) None

2. Answer **any four** : **(4×4=16)**

1) Define herbal technology and describe the scope of herbal technology in pharmaceutical industry.

2) Define Asava. How do you determine the alcohol content of Asava ?

3) Define processing and write a brief note on different processing methods.

4) List four merits and demerits of monoherbal preparations with example.

5) Write short note on herbal skin care cosmetics.

3. Answer **any four** : **(4×4=16)**

1) Define the following with examples :

a) Avaleha b) Churna

2) Define phytopharmaceuticals, name plant derived pharmaceutical products, their source, drug and indications.

3) Write note on efficacy considerations of herbal medicine.

4) Classify hair care cosmetics, write the ideal characteristics of hair colorants.

5) Describe the classification of herbal drugs under 4 categories.

4. Answer **any two** : **(8×2=16)**

   1) Describe the method of preparation of Asava with suitable example and how do you standardize Asava ?

   2) Define herbal medicine and describe the advantages and limitations of herbal medicine.

   3) Write note on :

      a) Herbal Drug Regulations in India

      b) Safety considerations of herbal medicine.

5. Answer **any two** : **(8×2=16)**

   1) Describe the methods in quality assessment of herbal drugs as per WHO guidelines.

   2) Classify hair care cosmetics, how do you standardize a herbal shampoo ?

   3) Describe the merits and demerits of polyherbal formulations.

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