Seat No.

Set **P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Physics
Energy Resources and Conservation (G04-GE-OE-101)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose Correct Alternatives.   **06**

1) _____ is the major source of all energy on earth.
   a) Soil   b) Oceans
   c) The Sun   d) The Moon

2) Energy resources which are being used for many decades are known as _____.
   a) conventional energy resource
   b) non- conventional energy resource
   c) fuel cell
   d) primary energy source

3) _____ of the following energy sources is affected when energy crops compete with food production.
   a) Solar   b) Biomass
   c) Wind   d) Hydro

4) Photovoltaic effect in solar cells converts solar energy into _____ energy.
   a) chemical   b) mechanical
   c) sound   d) electric

5) The light energy supplied to solar cell is in the form of _____.
   a) neutrons   b) electrons
   c) positrons   d) photons

6) The term biomass most commonly refers to _____.
   a) inorganic matter   b) organic matter
   c) chemicals   d) ammonium compounds

Q.2 Answer the following. (Any Three)   **06**
   a) State the applications of solar energy.
   b) Distinguishes between primary and secondary energy sources.
   c) What is the principle of energy conservation?
   d) What are the common forms of energy?
   e) Define fill factor and efficiency of a solar cell?

Q.3 Answer the following. (Any Two)   **06**
- **a)** What are the advantages and disadvantages of solar energy?
- **b)** Describe in brief wind energy.
- **c)** Describe an energy chain giving example.

Q.4 Answer the following. (Any Two)   **06**
- **a)** What is biomass energy? Explain the types biomass energy.
- **b)** Write a short note on solar thermal energy.
- **c)** Write the advantages and disadvantages of wind energy.

Q.5 Answer the following. (Any One)   **06**
- **a)** Explain in detail nuclear energy.
- **b)** Explain in detail and energy conservations planning and benefits of it.

Seat No.		**Set**	**P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Chemistry
Environmental Chemistry (G04-GE-OE-102)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
               2) Draw neat and labeled diagram and give equations wherever necessary.
               3) Figures to the right indicate full marks.

Q.1 Select the most correct alternative from among those given below.   **06**
   1) The sound pressure level i.e. intensity of sound is measured in _____.
      a) kelvin   b) degree Celsius
      c) Fahrenheit   d) decibel

   2) 'Activated sludge process' belongs to _____ treatment of water.
      a) primary   b) secondary
      c) tertiary   d) preprimary

   3) 'Biological Oxygen Demand' is expressed in _____.
      a) ppm   b) TMC
      c) Meter   d) Liter

   4) _____ is chemical method for disinfection of water.
      a) Distillation   b) Sedimentation
      c) Chlorination   d) Filtration

   5) The pollution due to radioactive substances and their reactions is called _____ pollution.
      a) noise   b) nuclear
      c) industrial   d) air

   6) The oxides of _____ are one of the cause of acid rain.
      a) carbon   b) phosphorus
      c) oxygen   d) nitrogen

Q.2 Answer any three of the following.   **06**
   a) Define:
      i) Soft Water
      ii) Sewage
   b) Explain the term pollution in brief.
   c) Write only resources of water.
   d) State and explain Chemical Oxygen Demand (COD).
   e) Explain in brief coagulation method of treatment of water.

Q.3 Write a short note any two of the following.   **06**
    a) Sources and effects of sound pollution
    b) Types of water pollutants
    c) Sources and health hazards of oxides of carbon

Q.4 Answer any two of the following.   **06**
    a) Discuss the various sources of water pollution.
    b) Explain the sources and health hazards of oxides of sulphur.
    c) Discuss the physical methods employed in treatment of water.

Q.5 Answer any one of the following.   **06**
    a) Discuss the sources, effects and control measures of soil pollution.
    b) With a neat and labeled diagram, explain the process of demineralization of water by ion exchange method.

Seat No.

Set **P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Botany
Horticulture (G04-GE-OE-103)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat diagrams wherever necessary.

Q.1 Rewrite the sentence by choosing correct alternative: **06**
1) A branch of horticulture, which deals with the scientific study of flower is called as _____.
a) Pomoculture   b) Floriculture
c) Olericulture   d) Horticulture

2) Vegetative propagation of cynadon is through _____.
a) Runners   b) Suckers
c) Slips   d) Stolen

3) Tongue grafting is a modified form of _____.
a) Saddle grafting   b) Whip grafting
c) Inarching   d) None of the above

4) Ginger shows presence of _____.
a) Tubers   b) Bulb
c) Rhizome   d) Bulbs

5) Tubers are formed in _____.
a) Mango   b) Banana
c) Guava   d) Potato

6) Stem cutting is common in _____.
a) Rose   b) Strawberry
c) Potato   d) Jamun

Q.2 Answer any three of the following :   **06**
a) What are annuals?
b) Give two uses of knife in horticulture.
c) Enlist types of budding.
d) Name any two bulb producing plants.
e) What is leaf cutting?

Q.3 **Answer the following questions. (Any Two)** **06**
   a) Explain whip grafting.
   b) Write a note on offsets.
   c) Describe potting and repotting technique in short.

Q.4 **Answer the following questions. (Any Two)** **06**
   a) Explain use of secateurs or sickle in horticulture.
   b) Describe scope of Horticulture.
   c) Describe importance of Propagation.

Q.5 **Answer the following questions. (Any One)** **06**
   a) Explain Layering as methods of plant propagation.
   b) Describe branches of Horticulture in detail.

Seat No.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Zoology
Aquarium Fish Keeping and Maintenance (G04-GE-OE-104)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives.   **06**
1) The glass-plates of a home aquarium is sealed by -
     a) Agar Glue   b) Polusulfide sealant
     c) Silicon Rubber Sealant   d) Flour Glue

2) What is the common name of *Poecilia sphenops*?
     a) Short-finned Molly   b) Sail-fin Molly
     c) Mexican Sail-fin Molly   d) Gold Molly

3) Cleaning of the canister filter-intake, using a filter brush, is usually conducted in case of -
     a) Weekly maintenance of aquarium
     b) Bi-weekly maintenance of aquarium
     c) Monthly maintenance of aquarium
     d) Periodic maintenance of aquarium

4) 12% to 35% moisture is usually found in -
     a) Moist feed   b) Semi-moist feed
     c) Dry feed   d) Live feed

5) Which one of the following fresh waterfishes is reared in aquarium?
     a) Gold Fish   b) Butterfly fish
     c) Anemone fish   d) Blur Morph

6) Drying of artificial fish feed is usually done in -
     a) 70°C to 120°C   b) 100°C to 150°C
     c) 30°C to 80°C   d) 180°C to 230°C

Q.2 Answer the following. (Any Three)   **06**
     a) Give scientific names of Gold fish and Angel fish.
     b) Give an example of Endemic species of aquarium fish.
     c) Give common characters of Guppy fish.
     d) Give any two Aquarium fish diseases.
     e) Give common characters of Butterfly fish.

Q.3 **Answer the following. (Any Two)** **06**
   a) What is exotic species. Give scientific names of any exotic aquarium fish.
   b) Write a short note on the budget for setting Aquarium fish farm as cottage industry.
   c) Write a short note on different kinds of feed for aquarium fishes.

Q.4 **Answer the following. (Any Two)** **06**
   a) Mention the principles associated with fish transport.
   b) Write a short note on monosex fishes.
   c) Enlist the physico-chemical parameters of water to maintain aquarium.

Q.5 **Answer the following. (Any One)** **06**
   a) Elucidate briefly the potential scope of aquarium fish keeping industry as a cottage industry.
   b) What is sexual dimorphism? Explain with any one example you studied.

| Seat No. | | Set | **P** |

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Mathematics
Quantitative Aptitudes for Competitive Examination (G04-GE-OE-110)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 **Choose the correct alternative for each of the following.**   **06**

1) What is the sum of all natural numbers from 1 to 100?
     a) 5050   b) 6000
     c) 5000   d) 5052

2) H.C.F of $4 \times 27 \times 3125$, $8 \times 9 \times 25 \times 7$ and $16 \times 81 \times 5 \times 11 \times 49$ is
     a) 180   b) 360
     c) 540   d) 1260

3) Find the Average of $205, 302, 108, 403,$ and 202
     a) 450   b) 1225
     c) 244   d) 1220

4) If $289 = 17^{\frac{1}{5}x}$ then $x =$?
     a) $\dfrac{2}{5}$ b) 8
     c) 16   d) 10

5) What would be the simple Interest obtained on an amount of Rs.5000 at the rate of 6 p.c.p.a after 3 years?
     a) 750   b) 900
     c) 950   d) 928

6) An umbrella market at Rs. 80 is sold for Rs. 68. The rate of discount is _____.
     a) 15%   b) 17%
     c) 18.5%   d) 20%

Q.2 **Attempt Any Three of the following.** **06**
  a) Find the H.C.F of $108, 288$ and 360.
  b) Simplify $\frac{(893+786)^2 - (893-786)^2}{(893 \times 786)}$
  c) Find the Average of all prime numbers between 30 and 50.
  d) If $x = y^a, y = z^b$ and $z = x^c$ then find value of abc.
  e) Find the simple interest on Rs.3000 at $6\frac{1}{4}\%$ per annum for the period from 4th Feb 2009 to 18th April 2009.

Q.3 **Attempt Any Two of the following** **06**
  a) If $\sqrt{1 + \frac{x}{144}} = \frac{13}{12}$ then find the value of x.
  b) The difference of two numbers is 11 and one-fifth of their sum is 9. Find the numbers.
  c) Find the compound interest of Rs.16000 at 20% per annum for 9 months, compounded quarterly.

Q.4 **Answer Any Two of the following** **06**
  a) Find the value of x
    1) $0.006 \div x = 0.6$
    2) $x \div 0.025 = 80$
  b) Arrange the fraction $\frac{17}{18}, \frac{31}{36}, \frac{43}{45}, \frac{59}{60}$ in the ascending order.
  c) A man spends Rs.500 in buying 12 tables and chairs. The cost of one table is Rs.50 and that of one chair is Rs.40. What is the Ratio of the numbers of the chairs and tables purchased?

Q.5 **Answer Any One of the following** **06**
  a) 1) The age of father 10 years ago was thrice the age of his son. 10 years hence fathers age will be twice that of his son. Find the Ratio of their present ages
    2) There are six numbers $30, 72, 53, 68, x$ and 87 out of which x is unknown. The Average of the number is 60. What is the value of x?
  b) The salary of A, B and C together amounts to Rs.33300. If they spend 80%, 85% and 75% of their respective incomes, their saving are as 7:6:9 find the salary of B.

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Set | **P**

**B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April – 2025
Statistics
Fundamental of Statistics (G04-GE-OE-111)**

Day & Date: Wednesday, 30-April-2025　　　　　　　　　Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1　Choose correct alternatives.　　　　　　　　　　　　　　　　06
　　1)　Which limits are excluded in case of exclusive type of class intervals?
　　　　a)　Lower limits　　　　　　　b)　Upper limits
　　　　c)　Either a and b　　　　　　d)　Both a and b

　　2)　With the help of histogram, one can determine _____.
　　　　a)　median　　　　　　　　　b)　deciles
　　　　c)　percentiles　　　　　　　d)　mode

　　3)　If 10 is subtracted from each observation then mean of the set of n observations is _____.
　　　　a)　Not affected　　　　　　b)　Zero
　　　　c)　Increased by 10　　　　d)　Decreased by 10

　　4)　In standard deviation, the deviation of the items x_i are always taken from _____.
　　　　a)　Mean　　　　　　　　　b)　Median
　　　　c)　Mode　　　　　　　　　d)　Zero

　　5)　The sum of squares of deviations is minimum when deviations are taken from _____.
　　　　a)　mode　　　　　　　　　b)　mean
　　　　c)　median　　　　　　　　d)　zero

　　6)　The limits of Karl Pearson's coefficient of correlation (r) is _____
　　　　a)　0 to 1　　　　　　　　　b)　0 to ∞
　　　　c)　-1 to 1　　　　　　　　d)　None of the above

Q.2　Answer the following. (Any Three)　　　　　　　　　　　　　06
　　a)　Explain secondary data.
　　b)　Define M.D. and Coefficient of M.D.
　　c)　State merits and demerits of geometric mean.
　　d)　Define Spearman's rank correlation coefficient and state the limits of R.
　　e)　Define range and coefficient of range.

Q.3 Answer the following. (Any Two) 06
   a) Define the terms: Class limits, class frequency, and cumulative frequency.
   b) Explain the construction of histogram.
   c) Define mode, give merits and demerits of mode.

Q.4 Answer the following. (Any Two) 06
   a) Define:
      i) Standard deviation
      ii) Quartile deviation
      iii) Coefficient of variation
   b) Explain scatter diagram.
   c) Explain lines of regression.

Q.5 Answer the following. (Any One) 06
   a) For any two positive observations, prove that $A.M. \geq G.M. \geq H.M.$
   b) Define Mean Deviation (M.D.). State and prove its minimal property.

Seat No.

**B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Computer Science
Office Management Tools (G04-GE-OE-108)**

Day & Date: Wednesday, 30-April-2025　　　　　　　　Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1　Choose the correct alternative from the options.　　　　　　　06
　　1)　Which page's header or footer is printed automatically?
　　　　a)　on the first page　　　　b)　on the last page
　　　　c)　on alternate page　　　　d)　every page

　　2)　Which of these toolbars allows you to alter the fonts' sizes?
　　　　a)　Standard　　　　　　　　b)　Formatting
　　　　c)　Options　　　　　　　　d)　All of the above

　　3)　Microsoft PowerPoint is a _____ program.
　　　　a)　Graphics　　　　　　　　b)　Presentation
　　　　c)　Data Analysis　　　　　d)　All of the above

　　4)　What is the default file extension used by Excel 2016 and later versions?
　　　　a)　.xls　　　　　　　　　　b)　.xlsx
　　　　c)　.xlsm　　　　　　　　　d)　.xlsb

　　5)　What is the default color of the pen in a PowerPoint slide?
　　　　a)　Red　　　　　　　　　　b)　Blue
　　　　c)　Green　　　　　　　　　d)　Yellow

　　6)　The file type_____ indicates the file is a Word document.
　　　　a)　.msw　　　　　　　　　b)　.wor
　　　　c)　.wrd　　　　　　　　　d)　.doc

Q.2　Attempt the following. (Any Three)　　　　　　　　　　06
　　a)　In which year was the first Microsoft Office suite released?
　　b)　What is a cell in Excel?
　　c)　What is 'Format Painter' used for?
　　d)　What is power point?
　　e)　What is the purpose of the TRIM function?

Q.3 Attempt the following. (Any Two)   06
   a) Explain the PivotTable function.
   b) Explain the difference between a workbook and a worksheet.
   c) How to insert a hyperlink to a PowerPoint presentation?

Q.4 Answer the following. (Any Two)   06
   a) What are the different data formats in Excel?
   b) How could you add Header/Footer in PowerPoint?
   c) How do you enter data into Excel?

Q.5 Answer the following. (Any One)   06
   a) What is Microsoft Word? Explain its key features.
   b) What are the basic components of Excel?

Seat No.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Electronics
Basic Electronic Consumer Applications (G04-GE-OE-105)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
         2) Draw neat Labelled diagrams wherever necessary.
         3) Figures to the right indicate full marks.
         4) Use of log table and calculator is allowed.

Q.1 Select the correct alternatives from the following.   **06**

1) _____diode emits light radiations.
     a) LED   b) Solar cell
     c) RTD   d) Phot diode

2) Relay is _____ type of switch.
     a) mechanical   b) electromagnetic
     c) electric   d) magnetic

3) In toilet flushing system to control flow of water _____ transmitter and receiver is used
     a) UV   b) ultrasonic
     c) IR   d) super sonic

4) _____ is temperature sensor.
     a) photo diode   b) LDR
     c) PIR   d) RTD

5) PIR sensor is _____ transducer.
     a) Passive
     b) Active
     c) neither active nor passive
     d) active as well as passive

6) Bruglar alaram uses _____ sensor.
     a) RTD   b) LDR
     c) LM 35   d) IR

Q.2 Answer the following. (Any Three)   **06**
 a) What is voltage regulator?
 b) What are the types of transistor?
 c) What is the principle of LDR?
 d) Draw the diagram of solar cell.
 e) Name the terminals of LM35.

Q.3 Answer the following. (Any Two)   **06**
 a) Explain construction and working of LED.
 b) Explain IR receiver.
 c) Explain RTD in detail.

Q.4 Answer the following. (Any Two)   **06**
 a) Explain action of transistor as switch.
 b) Explain use of LED strips for decoration by using power transistor.
 c) Explain use of solar panel to recharge the two-wheeler battery.

Q.5 Answer the following. (Any One)   **06**
 a) Explain with neat circuit diagram TV remote to turn on and off fan.
 b) Explain with neat circuit diagram speed control of fan by using LM 35.

Seat No.		**Set**	**P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Microbiology
Human Health and Hygiene (G04-GE-OE-106)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1   Choose correct alternative. (MCQ)   **06**
1)   Rest, sleep, physical exercise, and cleanliness a part of _____.
 a)   Social hygiene   b)   Personal hygiene
 c)   Hygiene   d)   None of the above

2)   Which of the following factor is necessary for a healthy person?
 a)   Personal hygiene   b)   Proper diet
 c)   Vaccination   d)   All of the above

3)   Germs live in _____.
 a)   Dust   b)   Water
 c)   Air   d)   All of these

4)   Calcium, iron, potassium, iodine, and common salt are examples of _____
 a)   Vitamins   b)   Proteins
 c)   Minerals   d)   Carbohydrates

5)   Which of the following is a waterborne disease?
 a)   Typhoid   b)   Cholera
 c)   Diarrhea   d)   All of the above

6)   Within how many days after birth a stable flora develops?
 a)   1 day   b)   7 days
 c)   7-14 days   d)   30 days

Q.2   Answer the following. (Any Three)   **06**
 a)   What is hygiene?
 b)   Why is exercise important to health?
 c)   Write two examples of food borne diseases.
 d)   Define Innate immunity.
 e)   Examples of normal flora of Human body.

Q.3   Answer the following. (Any Two)   **06**
   a)   Write a note on air borne diseases.
   b)   Explain Good Hygiene Practices.
   c)   What is National Health Mission?

Q.4   Answer the following. (Any Two)   **06**
   a)   Write a short note on water borne diseases.
   b)   Control and prevention of epidemics and pandemics.
   c)   Normal flora of Human body and its role in Human health.

Q.5   Answer the following. (Any One)   **06**
   a)   Explain effects of health education, levels and practices of Health
            Education.
   b)   Write in details on diseases transmitted through physical contact.

Seat No.	

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Geography
Geography of Maharashtra – I (G04-GE-OE-107)

Day & Date: Wednesday, 30-April-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
2) Draw neat diagram and give equations whenever necessary.
3) Figures to the right indicate full marks.
4) Use of stencil is allowed.

Q.1   Rewrite the sentences by choosing the correct alternatives.   06
1) The area of Maharashtra state ranks _____ in India
a) 1st   b) 2nd
c) 3rd   d) 4th

2) _____ river basin is largest in Maharashtra.
a) Krishna   b) Godavari
c) Bhima   d) Vainganga

3) In Maharashtra _____ forests are found in dry climate.
a) tropical evergreen forest
b) most deciduous forest
c) dry deciduous forest
d) thorny bushes

4) Bombay High is famous for _____ resources.
a) iron ore deposits   b) coal deposits
c) petroleum deposits   d) manganese deposits.

5) On Maharashtra plateau _____ types of soil mostly found.
a) riverine alluvial   b) black regur soil
c) laterite   d) desert sandy

6) _____ is a highest mountain peak found in Maharashtra.
a) Saler   b) Kalasubai
c) Mahabaleshwar   d) Torana

Q.2 Answer the following questions. (Any Three)   **06**
  a) State the location of Maharashtra.
  b) Give the names of mountain ranges in Maharashtra.
  c) Give the name of westward rivers in Maharashtra.
  d) Characteristics of black cotton regur soil.
  e) Give the name of various tanks found in Maharashtra.

Q.3 Write Short Notes. (Any Two)   **06**
  a) Describe the Bhima river basin in Maharashtra.
  b) Describe various seasons in Maharashtra.
  c) Describe the rainfall distribution in Maharashtra.

Q.4 Answer the following questions. (Any Two)   **06**
  a) Describe the Godavari river basin in Maharashtra.
  b) State the various factors affecting on the distribution of rainfall in Maharashtra.
  c) Describe iron ore deposits in Maharashtra.

Q.5 Answer the following questions. (Any One)   **06**
  a) Describe the physiographic division of Maharashtra.
  b) Describe the various types of vegetation in Maharashtra.

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Set **P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Geology
Natural Hazards and Disaster Management (G04-GE-OE-109)

Day & Date: Wednesday, 30-April-2025

Time: 09:00 AM To 10:30 AM

कमाल गुण: ३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.

२) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ **खालील दिलेले योग्य पर्याय निवडून गाळलेल्या जागा भरा.** 0६

१) खालीलपैकी कोणता नैसर्गिक धोका आहे?

अ) भूकंप
ब) थर्मल प्लांट आपत्ती

क) रेल्वे दुर्घटना
ड) बॉम्बस्फोट

२) दुष्काळी परिस्थितीवर मात करण्यासाठी खालीलपैकी कोणत्या पद्धतींचा समावेश आहे?

अ) खंदक

ब) बांध बांधणे

क) छतावरील पावसाचे पाणी साठवण

ड) वरील सर्व

३) खालीलपैकी कोण नैसर्गिक आपत्ती व्यवस्थापन कार्यात सामील होतात?

अ) सरकारी
ब) सोसायटी

क) गैर–सरकारी संस्था
ड) यापैकी सर्व

४) पृथ्वीच्या पृष्ठभागावर छिद्रातून गरम वितळलेल्या खडक सामग्री, वायु, खडकाचे तुकडे बाहेर पडतात या प्रक्रियेला ––– म्हणतात.

अ) भूकंप
ब) भूस्खलन

क) ज्वालामुखी
ड) यापैकी काहीही नाही

५) खालीलपैकी कोणत्या प्रक्रिये दरम्यान, नदी वाहिनीमुळे जमिनीवर पाण्याचे अतिक्रमण होते?

अ) त्सुनामी
ब) पूर

क) ढग फुटणे
ड) वरील सर्व

६) एका विशिष्ट प्रदेशात एका दिवसात 24 तासामध्ये 100 मि.मी. पेक्षा जास्त घटना घडण्याच्या घटनेला ——— असे म्हणतात.

अ) दुष्काळ   ब) पूर

क) ढग फुटी   ड) त्सुनामी

प्र.२ **खालीलपैकी कोणत्याही तीन प्रश्नांची उत्तरे लिहा.**   0६

अ) त्सुनामीची व्याख्या लिहा.

ब) आपत्ती व्यवस्थापन म्हणजे काय?

क) भूकंपाची व्याख्या लिहा.

ड) महाराष्ट्रातील दुष्काळ परिस्थितीची कोणतीही दोन कारणे सांगा.

इ) भूस्खलन म्हणजे काय?

प्र.३ **खालील प्रश्नांची उत्तरे लिहा. (कोणतेही दोन)**   0६

अ) टीप लिहा – चक्रीवादळाचे समाजावर होणारे परिणाम

ब) भूकंपाचे फोकस आणि केंद्रबिंदू दर्शविणारी आकृती काढा व नावे द्या.

क) भारतातील भूकंप प्रवण क्षेत्र यावर एक टीप लिहा.

प्र.४ **खालील प्रश्नांची उत्तरे लिहा. (कोणतेही दोन)**   0६

अ) आपत्ती व्यवस्थापन चक्रावर टीप लिहा.

ब) ज्वालामुखीचे परिणाम आपत्ती म्हणून स्पष्ट करा.

क) ढग फुटीच्या परिणामांचे वर्णन करा.

प्र.५ **खालील प्रश्नाचे उत्तर लिहा. (कोणताही एक)**   0६

अ) दुष्काळापूर्वी आणि नंतरचे व्यवस्थापन स्पष्ट करा.

ब) भूस्खलनाच्या विविध कारणांचे वर्णन करा.

**B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Geology
Natural Hazards and Disaster Management (G04-GE-OE-109)**

Day & Date: Wednesday, 30-April-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

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

Q.1 Choose correct alternatives from the options. 06

1) Which of the following is a Natural Hazard?
a) Earthquake
b) Thermal plant disaster
c) Railway accident
d) Bomb blast

2) Which of the following methods are involved to overcome drought situation?
a) trenching
b) construction of bandhas
c) roof rain water harvesting
d) all of the above

3) Which of following are involved in management natural disaster?
a) Government
b) Society
c) Non- government Organization
d) All of these

4) A vent or opening on the earth surface through hot molten rock material, gases, rock fragments are ejected is called as _____
a) earthquakes
b) soffione
c) volcano
d) none of these

5) During _____, river channel leads to encroachment of land.
a) Cyclone
b) Flood
c) Cloud burst
d) Tsunami

6) The phenomenon of occurrence of more than 100 mm in a particular region in 24 hours is called as _____.
a) Drought
b) Flood
c) Cloud burst
d) Tsunami

Q.2   Answer the following. (Any Three)   **06**
   a)   Define Tsunami.
   b)   What is Disaster Management?
   c)   Define Earthquake.
   d)   Give any two causes of Drought in Maharashtra.
   e)   What is Landslide?

Q.3   Answer the following. (Any Two)   **06**
   a)   Write a note on - Effects of Cyclone on Society
   b)   Draw labelled diagram showing Focus and Epicenter of Earthquake.
   c)   Write a note on - Earthquake prone zones in India

Q.4   Answer the following. (Any Two)   **06**
   a)   Write a note on - Disaster management cycle.
   b)   Explain effects of Volcano as disaster.
   c)   Describe effects of cloud burst.

Q.5   Answer the following. (Any One)   **06**
   a)   Explain management before and after Drought.
   b)   Describe various causes of Landslide.

Seat No.		**Set**	**P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
English
English for Communication (ENG-101)

Day & Date: Friday, 02-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   06
   1)   _____ words are generally not used in verbal communication.
   a) Technical   b) Simple
   c) Difficult   d) local

   2)   Non-verbal communication often happens _____.
   a) carefully   b) purposely
   c) intentionally   d) unintentionally

   3)   _____ from the receiver ensures that message is understood properly.
   a) Encoding   b) Decoding
   c) Feedback   d) Receiving

   4)   _____ interviews are conducted at the end of the training programme.
   a) Structured   b) Summative
   c) Non-structured   d) Non-summative

   5)   _____ important in a group discussion.
   a) Emotional stability   b) Hostility
   c) Ignorance   d) Aggressiveness

   6)   In a group discussion, we should be _____.
   a) assertive   b) dominating
   c) subjective   d) ignorant

Q.2 Answer the questions in brief. (Any Three)   06
   a) Comment on the 'Dos' of group discussion.
   b) How will you prepare for an interview?
   c) What does mean by non-verbal communication?
   d) What does mean by communication?
   e) What does mean by group discussion?

Q.3 Write short answers to the questions. (Any Two) 06
   a) State the significance of the communication.
   b) Comment on the 7Cs of communication
   c) What does mean by formal communication?
   d) Comment on the barriers to communication.

Q.4 Answer the following questions. (Any One) 12
   a) Write a script of an interview for the post of Assistant professor in English in the degree college.
                              OR
   b) Write a script of a group discussion on increasing use of mobile by the students.

Seat No.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April – 2025
IKS
Indian Knowledge System/ General IKS (IKS-101)

Day & Date: Saturday, 03-May-2025　　　　　　　　Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1　Choose the correct alternatives from the options.　　　06

1) Which of the following is a feature of the Vedic philosophical systems?
　a) Rejection of rituals
　b) Emphasis on ethics alone
　c) Acceptance of the authority of the Vedas
　d) Focus on human-cantered philosophy

2) Which philosophy emphasized non-violence (ahimsa) and self discipline for liberation?
　a) Jainism　　　　　　　b) Buddhism
　c) Yoga　　　　　　　　d) Nyaya

3) What was the significant contribution of the Bodhayana Sutra in ancient Indian mathematics?
　a) Development of algebra　　b) Calculation of square roots
　c) The concept of zero　　　d) Introduction of calculus

4) Which traditional Indian medical system emphasizes the balance of bodily elements (doshas)?
　a) Unani　　　　　　　　b) Ayurveda
　c) Homeopathy　　　　　d) Naturopathy

5) What is one of the primary practices of sustainability in traditional Indian agriculture?
　a) Monocropping　　　　　　b) Crop rotation
　c) Use of chemical pesticides　d) Large-scale mechanization

6) What was the role of sacred groves in ancient India?
　a) To serve as places of worship and environmental conservation
　b) To serve as agricultural fields
　c) To serve as military bases
　d) To serve as market places

Q.2 Answers the following question. (Any Three)   **06**
   a) What were the main subjects taught at Takṣaśilā?
   b) How did the Bodhayana Sutra contribute to the development of mathematics in ancient India?
   c) Discuss the significance of the concept of zero in Indian mathematics.
   d) Describe the traditional Indian approach to water conservation and management.
   e) How does Ayurveda integrate the concept of balance in health with environmental sustainability?

Q.3 Answer the following question. (Any Two)   **06**
   a) Discuss the role of ancient Indian practices like sustainable agriculture and water conservation.
   b) Describe the concept of light as discussed in ancient Indian texts.
   c) Explain the concept of Sattvic food in Ayurveda and its importance for health.

Q.4 Answer the following question. (Any Two)   **06**
   a) Explain the role of guru-shishya tradition in the Indian Knowledge System.
   b) Discuss the significance of the Iron Pillar of Delhi and its scientific implications.
   c) How does the practice of yoga contribute to both individual health and environmental awareness in traditional Indian thought?

Q.5 Answer the following question. (Any One)   **06**
   a) Explain foundational concepts and characteristics of IKS.
   b) Write a detailed note on Indian innovations in daily life chemistry.

Seat No.

Set P

**B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April – 2025
VES
Constitution of India / Indian Constitution and Democracy (ICD)**

वार, दिनांक : सोमवार, ०५-०५-२०२५   कमाल गुण: ३०
वेळ: सकाळी ०९:०० ते १0:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
२) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ खालील दिलेले योग्य पर्याय निवडून गाळलेल्या जागा भरा.   ०६

१) भारताच्या मुख्य निर्वाचन आयुक्तांची नेमणूक ——— हे करतात.
अ) राष्ट्रपती   ब) पंतप्रधान
क) राज्यपाल   ड) उपराष्ट्रपती

२) भारतात ——— ही शासनपद्धती आहे.
अ) संमिश्र   ब) साम्यवादी
क) अध्यक्षीय   ड) संसदीय

३) ——— या शासनपद्धतीमध्ये कार्यकारी मंडळ किंवा मंत्रीमंडळ कायदेमंडळाला
जबाबदार राहून काम करते.
अ) संसदीय   ब) अध्यक्षीय
क) साम्यवादी   ड) संमिश्र

४) ——— हे ई–गव्हर्नसचे उदाहरण आहे.
अ) जन आरोग्य योजना   ब) डिजिटल इंडिया
क) फूड सिक्युरिटी स्कीम   ड) यापैकी नाही

५)   ——— या वर्षीपासून भारतीय राज्यघटनेची अंमलबजावणी सुरू झाली.
अ) २६ नोव्हेंबर १९४९   ब) १५ ऑगस्ट १९४७
क) २१ जानेवारी १९५0   ड) २६ जानेवारी १९५0

६)   भारतामध्ये ——— हा दिवस 'संविधान दिवस' आहे.
अ) २६ नोव्हेंबर   ब) १५ ऑगस्ट
क) 0९ ऑगस्ट   ड) २६ जानेवारी

प्र.२ थोडक्यात उत्तरे लिहा. (कोणतेही ३)   ०६
   १)   राज्यसभेची रचना स्पष्ट करा.
   २)   लोकसभेची रचना स्पष्ट करा.
   ३)   लोकशाहीचे प्रकार स्पष्ट करा.
   ४)   सुशासन म्हणजे काय?
   ५)   भारताच्या निवडणूक आयोगाची रचना स्पष्ट करा.

प्र.३ थोडक्यात उत्तरे लिहा. (कोणतेही २)   ०६
   १)   सुशासनची वैशिष्ट्ये स्पष्ट करा.
   २)   भारतीय राज्यघटनेचा सरनामा लिहा.
   ३)   भारतीय नागरिकांची मूलभूत कर्तव्ये स्पष्ट करा.

प्र.४ थोडक्यात उत्तरे लिहा. (कोणतेही २)   ०६
   १)   लोकसभेचे अधिकार आणि कार्ये स्पष्ट करा.
   २)   राज्यसभेचे अधिकार आणि कार्ये स्पष्ट करा.
   ३)   मंत्रिमंडळ स्पष्ट करा.

प्र.५ सविस्तर उत्तर लिहा. (कोणतेही १)   ०६
   १)   भारतीय राज्यघटनेची वैशिष्ट्ये स्पष्ट करा.
   २)   भारतीय निर्वाचन आयोगाचे अधिकार आणि कार्ये सांगा.

Seat No.		Set	P

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April – 2025
VES
Constitution of India/Indian Constitution and Democracy (ICD)

Day & Date: Monday, 05-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   06

1) The Chief Election Commissioner of India is appointed by the _____.
a) President   b) Prime Minister
c) Governor   d) Vice-President

2) India has _____ form of Government.
a) Mix   b) Communist
c) Presidential   d) Parliamentary

3) In the _____ type of Government, executive is responsible to the Legislature.
a) Parliamentary   b) Presidential
c) Communist   d) Mix

4) _____ is an example of E-Governance.
a) Jan Arogya Yojana   b) Digital India
c) Food Security Scheme   d) None of these

5) In _____ year constitution of India implemented.
a) 26 November 1949   b) 15 August 1947
c) 21 January 1950   d) 26 January 1950

6) _____ is the Constitution Day in India.
a) 26 November   b) 15 August
c) 09 August   d) 26 January

Q.2 Write answer in brief. (Any 3)   06
1) Explain the composition of Rajyasabha.
2) Explain the composition of Loksabha.
3) Explain the types of Democracy.
4) What is the Good Governance?
5) Explain the structure of Election Commission.

Q.3 Write answers in brief. (Any 2) 06
    1) Explain the features of Good Governance.
    2) Write the preamble of the Indian Constitution.
    3) Explain the fundamental duties of Indian Citizens.

Q.4 Write answers in brief. (Any 2) 06
    1) Explain the power and functions of Loksabha.
    2) Explain the power and functions of Rajyasabha.
    3) Explain the council of ministers.

Q.5 Write answer in detail. (Any 1) 06
    1) Explain the features of Indian Constitution.
    2) Explain the power and functions of Election Commission of India.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Physics - I
Mechanics and Properties of Matter (G04-0101)

Day & Date: Tuesday, 06-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 Choose correct alternative: **06**

1) Moment of inertia in rotational motion is analogous to the ____in translation motion.
    a) mass   b) force
    c) momentum   d) acceleration

2) The length of an equivalent simple pendulum of the compound pendulum is ____.
    a) $\dfrac{k^2}{l^2} + l$ b) $\dfrac{k^2 + l^2}{2}$

    c) $\dfrac{k^2 + l^2}{l}$ d) $k^2 + l^2$

3) The ratio of shearing stress to shearing strain is called ____.
    a) Young's modulus   b) Bulk Modulus
    c) Modulus of rigidity   d) Poisson's ratio

4) The C.G.S. unit of surface tension is ____.
    a) dyne.cm   b) dyne/cm
    c) dyne.cm^2 d) cm/dyne

5) Bernoulli's equation deal with the law of conservation of ____.
    a) mass   b) momentum
    c) energy   d) work

6) The profile of advancing liquid in the capillary tube is a ____.
    a) ellipse   b) circle
    c) hyperbola   d) parabola

Q.2 Answer the following. (Any Three) 06
   a) Define moment of inertia.
   b) Draw schematic diagram of Kater's Pendulum.
   c) State Hooke's law of elasticity.
   d) Define Poisson's ratio.
   e) Define viscosity.

Q.3 Answer the following. (Any Two) 06
   a) Derive the expression for moment of inertia of a circular disc about axis of rotation passing through center and perpendicular to its plane.
   b) Find the difference of pressure between the two sides of the surface of a spherical drop of water of radius 0.5 mm. Surface tension of water is 0.075 N/m.
   c) Describe the experimental setup to determine the Poisson's ration of rubber tube.

Q.4 Answer the following. (Any Two) 06
   a) Show that shear strain is equivalent to extension strain and compression strain.
   b) Discuss the application of surface tension.
   c) Obtain the equation of continuity for steady fluid flow.

Q.5 Attempt the following. (Any One) 06
   a) What is flywheel? Obtain an expression for M.I. of a flywheel.
   b) Define compound pendulum. Show that oscillation of a compound pendulum are simple harmonic and obtain expression for its time period.

Seat No.		**Set**	**P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Chemistry-I
Physical and Inorganic Chemistry (G04-0102)

Day & Date: Wednesday, 07-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Draw neat and labeled diagrams and give equations wherever necessary.
3) Figures to the right indicate full marks.
4) Use of logarithmic table and calculator is allowed.

Q.1 Select the most correct alternative from among those given below.   **06**

1) Hydrolysis of methyl acetate in presence of acid is an example of _____ reaction.
a) Zero order   b) First order
c) Second order   d) Third order

2) The value of compressibility factor 'z' for an ideal gas is _____
a) zero   b) infinity
c) one   d) can't say

3) In BF_3 molecule, 'B' is in _____ hybridized state.
a) sp^3 b) $sp^3 d$
c) sp^2 d) sp

4) Bond order of Li_2 molecule is ____
a) 4   b) 3
c) 2   d) 1

5) The half life time for second order reaction is given as _____
a) $0.693/k$ b) $1/k\,a$
c) $3/2ka^2$ d) 1

6) On the basis of MOT, ____ is the paramagnetic molecule.
a) CO   b) NO
c) N_2 d) C_2

Q.2 **Answer Any Three of the following.**   **06**
   a) Give only demerits of Pauling - Slater Theory.
   b) What are the units of van der Waal's constants a and b?
   c) Give the conditions for successful overlap of atomic orbitals.
   d) Explain s-px overlap.
   e) Write any two statements for second law of thermodynamics.

Q.3 **Answer Any Two of the following**   **06**
   a) Discuss Postulates of VSEPR theory.
   b) Explain the causes of deviations from ideal behavior of real gases.
   c) Describe Bonding molecular orbitals.

Q.4 **Answer Any TWO of the following:**   **06**
   a) Explain the characteristics of first order reaction.
   b) Write a note on factors affecting the rate of chemical reactions.
   c) Draw only molecular orbital diagram for O_2 molecule. Comment on its
           bond order, stability and magnetic character.

Q.5 **Answer Any ONE the following:**   **06**
   a) Describe Andrew's isotherms for carbon dioxide gas.
   b) What is sp^3d^2 hybridization? Explain the formation of SF_6 molecule on
           the basis of sp^3d^2 hybridisation.

Seat No.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Mathematics (Paper - I) (G04-0110)

Day & Date: Thursday, 08-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1   Choose the correct alternative (MCQ)   06

1) The rank of matric $\begin{bmatrix} 1 & 2 & 5 & 7 \\ 2 & 3 & 4 & 8 \\ 0 & 0 & 0 & 0 \end{bmatrix}$ is _____

   a)   0   b)   1
   c)   2   d)   3

2) The eigen value of $\begin{bmatrix} 2 & 3 & 5 \\ 0 & 3 & 5 \\ 0 & 0 & 4 \end{bmatrix}$ are _____

   a)   2,3,5   b)   2,3,4
   c)   3,4,5   d)   0,3,5

3) $|4 - 3i| = $_____
   a)   5   b)   4
   c)   3   d)   7

4) If $y = x^m$ then $y_n = $ _____ if $n > m$
   a)   0   b) $m!\ x^{m-n}(m-n)!$
   c) $m!\ x^m(m-n)!$ d) $m!$

5) If $u = x^3 - 3xy^2,\ v = 3x^2y - y^3$ then $\frac{\partial u}{\partial y} + \frac{\partial v}{\partial x} = $ _____

   a)   0   b)   1
   c) x d) -1

6) If $\bar{r} = x\bar{\imath} + y\bar{\jmath} + z\bar{k}$ then div $\bar{r} = $ _____
   a)   0   b) $\frac{\bar{r}}{r}$
   c) -3 d)   3

Q.2 Answer the following. (Any Three)   06
    a) Find the rank of the matrix
$$\begin{bmatrix} 1 & 3 & 4 & 5 \\ 1 & 2 & 6 & 7 \\ 1 & 5 & 0 & 10 \end{bmatrix}$$
    b) Define modulus and argument of complex number.
    c) If $\phi = 3x^2y - y^3z^2$ find $\nabla\phi$ or $\text{grad}\phi$ at the point $(1, -2, -1)$
    d) Expand e^x in power of x
    e) If $u = \log(x^2 + y^2)$ prove that $\dfrac{\partial^2 u}{\partial x \partial y} = \dfrac{\partial^2 u}{\partial y \partial x}$

Q.3 Answer the following. (Any Two)   06
    a) State and prove Euler's theorem on Homogeneous Function.
    b) State and prove Cayley Hamilton theorem.
    c) Test the consistency of the following equation and if possible solve
        $x + y + z = -3, \; 3x + y - 2x = -2, \; 2x + 4y + 7z = 7$

Q.4 Answer the following. (Any Two)   06
    a) If $\bar{f} = xz^3\bar{\imath} - 2x^2yz\bar{\jmath} + 2yz^4\bar{k}$ Find $\text{curl}\,\bar{f}$ or $\nabla \times \bar{f}$ at the point (1,-1,1)
    b) Define Eigenvalues and eigen vector.
        Prove that if λ is the an eigen value of a Matrix A then $1/\lambda$ is the eigen value of a A^{-1}
    c) If $y = \sin(ax + b)$ then, show that
        $y_n = a^n \sin(ax + b + n\frac{\pi}{2})$

Q.5 Answer the following. (Any One)   06
    a) State and prove De-Moivre's theorem.
    b) State and prove Leibnitz's theorem.

Seat No.	

Set **P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Microbiology
Basics in Microbiology (G04-0106)

Day & Date: Thursday, 08-May-2025   Max. Marks: 30
Time: 03:00 PM To 04:30 PM

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

Q.1   Choose the correct alternative. (MCQ)   06
   1)   Where is the National Research Centre on Pomegranate (NRCP) located?
      a)   Pune   b)   Mumbai
      c)   Solapur   d)   Hyderabad

   2)   Dairy microbiology is related to _____
      a)   Milk and milk products   b)   Food
      c)   Water   d)   Air

   3)   In prokaryotic cells, ribosomes are ____
      a)   70 S   b)   80 S
      c)   60 S   d)   75 S

   4)   _____ is not a fermented food.
      a)   Idli   b)   Curd
      c)   Cheese   d)   Chapati

   5)   Antony van Leeuwenhoek was pioneered of _____
      a)   Petri plate   b)   Microscope
      c)   Hot Air Oven   d)   Incubator

   6)   Capsule antigen is called as _____
      a)   O   b)   Vi
      c)   K   d)   H

Q.2   Answer the following. (Any Three)   06
   a)   Enlist the various branches of Microbiology.
   b)   Give the full form of a) NIV, b) NARI
   c)   Give two examples of Rickettsia diseases.
   d)   What is the significance and function of Bacterial flagella?
   e)   Define taxonomy.

Q.3 Answer the following. (Any Two)   **06**
   a) Write a note on the Golden Era of Microbiology.
   b) Differentiate between Prokaryotic and Eukaryotic cell
   c) What are the contributions made by Alexander Fleming and Edward Jenner to developing Applied Microbiology?

Q.4 Answer of the following. (Any Two)   **06**
   a) Why Joseph Lister is known as the father of modern surgery?
   b) What are the differences between the capsule and slime layer?
   c) Write a short note on protoplast.

Q.5 Answer the following. (Any One)   **06**
   a) Describe in detail the Gram-positive cell wall of bacteria.
   b) Discuss the theory of spontaneous generation with an emphasis on the contribution of Louis Pasteur.

Seat No.	

**B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Statistics - I
Descriptive Statistics (G04-0111)**

Day & Date: Friday, 09-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

Instructions: 1) All questions are compulsory.
         2) Figures to the right indicate full marks.
         3) Use of Calculator is allowed.

Q.1 Choose the correct alternative.   **06**
   1) With the help of ogive curves, one cannot determine _____.
     a) Median   b) Deciles
     c) Percentiles   d) Mode

   2) The mean of 1, 3, 4, 5, 7 and 4 is n, then the value of n, is _____.
     a) 3   b) 4
     c) 5   d) 6

   3) the variance of 19, 21, 23, 25 and 27 is 8. The variance of 14, 16, 18, 20 and 22 is _____.
     a) Greater than 8   b) 8
     c) Less than 8   d) $8 - 5 = 3$

   4) The moments about origin are called _____.
     a) Momenta about zero   b) Raw moments
     c) Both a and b   d) Neither a nor b

   5) If mean = 50, mode = 40 and standard deviation = 5, the distribution is _____.
     a) Positively skewed   b) Negatively skewed
     c) Symmetrical   d) Difficult to tell

   6) To determine H.M., we use _____.
     a) Logarithm   b) Antilogarithm
     c) Reciprocal   d) None of these

Q.2 Answer the following. (Any Three)   **06**
   a) Define Variable and Constant.
   b) Define Median and Mode.
   c) Define Mean Deviation and Standard Deviation.
   d) Prove that first central moment is zero.
   e) Define positive skewness and negative skewness.

Q.3 Answer the following. (Any Two)   **06**
    a) Distinguish between Qualitative and Quantitative data.
    b) Show that the sum of deviation taken from mean is zero.
    c) Write a note on coefficient of variation.

Q.4 Answer the following. (Any Two)   **06**
    a) Prove for any discrete frequency distribution standard deviation is not less than mean deviation from mean.
    b) Prove that Bowley's coefficient of skewness lies between -1 and +1.
    c) Find mean and variance of first 10 natural numbers.

Q.5 Answer the following. (Any One)   **06**
    a) For two observations a and $b.$ Show that $\mathrm{AM} \geq \mathrm{GM} \geq \mathrm{HM}$
    b) State and prove minimal property of mean square deviation.

Seat No.		Set	P

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Botany - I
Algae, Fungi and Archegoniate (G04-0103)

Day & Date: Friday, 09-May-2025   Max. Marks: 30
Time: 03:00 PM To 04:30 PM

Instructions: 1) All questions are compulsory.
2) Draw neat and labeled diagram and give equations wherever necessary.
3) Figures to the right indicate full marks.
4) Use of logarithmic table and non-programmable calculator is allowed.

Q.1   Select the most correct alternative from among those given below.   06
1) In *Spirogyra,* the scalariform conjugation occurs in _____ species.
   a) dioecious   b) monoeicious
   c) homothallic   d) heterothallic

2) *Sargassum* reproduces sexually by _____ type.
   a) Oogamous   b) Anisogamous
   c) Isogamous   d) None of the above

3) _____ is called bread mould fungus.
   a) Aspergillus   b) Penicillium
   c) Mucor   d) Cercospora

4) Sexual reproduction in *Riccia* is _____.
   a) Oogamous   b) Anisogamous
   c) Isogamous   d) None of the above

5) The *Selaginella* shows _____ sporophyte.
   a) homosporous   b) heterosporous
   c) monosporous   d) tetrasporous

6) The sago starch is obtained from _____ plant.
   a) Ginko   b) Cycas
   c) Taxus   d) Cedrus

Q.2   Answer the following. (Any three)   06
   a) Give the systematic position of *Spirogyra.*
   b) Give the systematic position of *Riccia.*
   c) Give the occurrence of *Mucor.*
   d) Define Archegoniates.
   e) Classify the *Cycas* according to the classification given by Sporne.

Q.3 Answer the following. (Any two)   **06**
    a) Describe the thallus structure of *Spirogyra* with labelled diagram.
    b) Describe the economic importance of pteridophytes.
    c) Explain the economic importance of fungi.

Q.4 Answer the following. (Any Two)   **06**
    a) Describe the thallus structure of *Selaginella* with labelled diagram.
    b) Explain lateral conjugation method in *Spirogyra.*
    c) Describe the economic importance of Gymnosperm.

Q.5 Answer the following. (Any One)   **06**
    a) Explain in detail Life cycle of Mucor.
    b) With labelled diagram describe the anatomy of leaflet of *Cycas.*

| Seat No. | | **Set** | **P** |

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Zoology - I
Animal Diversity - I Non-chordates (G04-0104)

Day & Date: Saturday, 10-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 Choose the correct alternative.   06

1) Which of the following is a characteristic of Protozoa?
  a) Multicellular organisms
  b) Eukaryotic, unicellular organisms
  c) Asexual reproduction only
  d) No locomotors structures

2) Which phylum has an exoskeleton made of chitin?
  a) Porifera   b) Mollusca
  c) Arthropoda   d) Echinodermata

3) The canal system in Sycon is _____.
  a) Asconoid   b) Syconoid
  c) Leuconoid   d) None of the above

4) Which of the following is the mode of nutrition in Paramecium?
  a) Photosynthesis   b) Holozoic nutrition
  c) Saprophytic nutrition d) None of the above

5) The organism Taenia solium belongs to the phylum _____.
  a) Arthropoda   b) Platyhelminthes
  c) Mollusca   d) Nemathelminthes

6) In the phylum Mollusca, the body is divided into _____.
  a) Head and trunk
  b) Head, trunk, and mantle
  c) Head, thorax, and abdomen
  d) None of the above

Q.2 Answer the following. (Any three)   06
  a) Define the general characteristics of the kingdom Protista.
  b) Explain the classification of the phylum Porifera up to the class level.
  c) Describe the general characters of the phylum Cnidaria.
  d) Discuss the life history of Taenia solium.
  e) Explain the economic importance of mollusks.

Q.3 Answer the following. (Any two)   **06**
   a) What are the special features of the canal system in Sycon?
   b) Describe the parasitic adaptations in Ascaris lumbricoides.
   c) Explain the process of reproduction in Hydra.

Q.4 Answer the following. (Any two)   **06**
   a) What are the general characters of phylum Annelida.
   b) Explain the economic importance of leeches.
   c) Describe the structure and function of the water-vascular system in Asteroidea.

Q.5 Answer the following. (Any one)   **06**
   a) Discuss the classification of the phylum Arthropoda up to the class level.
   b) Describe the general characteristics and classification of the phylum Echinodermata.

Seat No.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Introduction to the Environment (G04-0112)

Day & Date: Saturday, 10-May-2025　　　　　　　　　　Max. Marks: 30
Time: 03:00 PM To 04:30 PM

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

Q.1　Choose the correct alternative.　　　　　　　　　　　　06

1) The _____ is the outermost solid part of the earth.
　a)　Mantle　　　　　　　　b)　Inner Core
　c)　Crust　　　　　　　　 d)　Outer Core

2) The layer _____ is unweathered parent rock which is compacted and cemented layer.
　a)　R- Horizon　　　　　　b)　A-Horizon
　c)　E-Horizon　　　　　　 d)　B-Horizon

3) _____ happens when both plates move apart from one other.
　a)　Transform boundaries　b)　Divergent boundaries
　c)　Convergent boundaries　d)　None of the above

4) The lowest layer of the atmosphere is _____.
　a)　Stratosphere　　　　　b)　Mesosphere
　c)　Ionosphere　　　　　　d)　Troposphere

5) Cooling and solidification of magma or lava lead to the formation of _____ rock.
　a)　Metamorphic　　　　　b)　Igneous
　c)　Sedimentary　　　　　 d)　None of the options

6) Which is the largest Planet of Solar family?
　a)　Earth　　　　　　　　 b)　Mars
　c)　Jupiter　　　　　　　　d)　Mercury

Q.2　Answer the following. (Any three)　　　　　　　　　　06
　a)　Write note on lithosphere.
　b)　Mention the global environmental problems.
　c)　Write a note on troposphere.
　d)　Explain sedimentary rock.
　e)　Explain the core, internal structure of the earth.

Q.3 Answer the following. (Any two)   **06**
    a)   Explain uniformitarianism.
    b)   Write note on seafloor spreading.
    c)   Explain biotic and abiotic factors.

Q.4 Answer the following. (Any two)   **06**
    a)   Explain rock cycle.
    b)   Write note on atmosphere.
    c)   Explain Holocene epoch.

Q.5 Answer the following. (Any one)   **06**
    a)   Write multidisciplinary nature of environmental science.
    b)   Explain inner planets and outer planets in solar system.

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

Q.1   Multiple Choose question.   06
    1) Most important agents of weathering is ____ factor.
        a) Water   b) Time
        c) Land forms   d) None of these

    2) ____ discontinuity separate sial and sima.
        a) Movorovisic   b) Conrad
        c) Moho   d) Gutenberg

    3) Earthquake wave is also called as ____ wave.
        a) Seismic   b) Sound
        c) Light   d) None of these

    4) Most abundant gas relies from volcano is ____.
        a) CO_2 b) Water vapour
        c) Sulfer   d) None of these

    5) The highest density layer in earth interior is ____.
        a) Crust   b) Mantle
        c) Inner core   d) outer layer

    6) Average density of the earth is ____ km.
        a) 5.5   b) 6.3
        c) 7   d) 6.5

Q.2   Answer the following. (Any Three)   06
    a) What is moho?
    b) What is Volcano?
    c) What is epicenter and focus?
    d) What is weathering?
    e) Write about revolution of earth.

Q.3   Answer the following. (Any Two)   06
    a)   Describe Seismic waves in earthquake?
    b)   What are inner planets in solar system?
    c)   Describe different branches of geology.

Q.4   Answer the following: (Any Two)   06
    a)   Describe causes of volcano.
    b)   Describe soil profile.
    c)   Describe the atmosphere.

Q.5   Answer the following: (Any One)   06
    a)   Describe the internal structure of earth.
    b)   Describe chemical types of weathering.

Seat No.	

Set **P**

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Computer Science - I
Programming Using 'C' (G04-0108)

Day & Date: Tuesday, 13-May-2025   Max. Marks: 30
Time: 03:00 PM To 04:30 PM

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

Q.1 Multiple Choose question.   **06**

1) C language is developed by _____.
     a) Steve Jobs   b) James Gosling
     c) Dennis Ritchie   d) Rasmus Lerdorf

2) Which of the following is true for variable names in C?
     a) They can contain alphanumeric characters as well as special characters
     b) It is not an error to declare a variable to be one of the keywords (like goto, static)
     c) Variable names cannot start with a digit
     d) Variable can be of any length

3) Functions in C Language are always _____.
     a) Internal
     b) External
     c) Both Internal and External
     d) External and Internal are not valid terms for functions

4) What is #include <stdio.h>?
     a) Preprocessor directive   b) Inclusion directive
     c) File inclusion directive   d) None of the mentioned

5) Which loop is most suitable to first perform the operation and then test the condition?
     a) for loop   b) while loop
     c) do-while loop   d) none of the mentioned

6) Array in C always start at _____.
     a) -1   b) 1
     c) 0   d) Value provided by user

Q.2   Answer the following. (Any Three)   **06**
    a)   State any eight keywords in C language.
    b)   Define Array? Write the syntax of array declaration.
    c)   Write the example of pointer initialization.
    d)   Define nested structure.

Q.3   Answer the following. (Any Two)   **06**
    a)   Explain the conditional statement with example.
    b)   Write a program that check given number is prime or not using
        function.
    c)   Explain data types used in c language.

Q.4   Answer the following: (Any Two)   **06**
    a)   Explain any two strings function with example.
    b)   Define Union? Give one example.
    c)   Write a program in c to calculate tile factorial of given number.

Q.5   Answer the following: (Any One)   **06**
    a)   Define pointer? Explain pointer arithmetic with example.
    b)   Explain nested if else statement. Write a program in to calculate the
        greatest number among three number.

Seat No.

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination: March/April - 2025
Geography - I (G04-0107)

Day & Date: Wednesday, 14-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

Instructions: 1) All questions are compulsory.
         2) Figures to the right indicate full marks.
         3) Draw neat diagrams and give equations wherever necessary.
         4) Use of stencil is allowed.

Q.1 Choose the correct alternative   **06**

1) _____ is the branch of science that dealt the evolution of landforms and their distribution on the earth surface.
   a) Climatology   b) Geomorphology
   c) Biogeography   d) Oceanography

2) Etna & Stromboli volcanoes near the Mediterranean Sea are the examples of _____ volcanoes.
   a) active   b) dormant
   c) extinct   d) None of them

3) Folded mountain and sea trenches have had been formed at the _____ boundary of plates.
   a) divergent   b) transform
   c) convergent   d) None of them

4) The _____ discontinuity is found in between Mantle and Core.
   a) Mohovisic   b) Conrad
   c) Guttenberg   d) None of them

5) The average density of whole earth is _____ gm/cm^3.
   a) 2.77   b) 5.5
   c) 10   d) 13.6

6) The radius of earth _____ kms.
   a) 6371   b) 6400
   c) 5371   d) 6000

Q.2 Answer the following. (Any Three)   **06**
   a) Give the names of two folded mountains
   b) Characteristics of primary waves
   c) Interior temperature
   d) Types of Earth Movement
   e) What is a rift valley?

Q.3 **Answer the following (Any Two)** **06**
   a) Describe all transition zone in interior earth.
   b) Describe the causes of volcanoes on the earth surface with good examples.
   c) Criticize Wegener's continental drift theory.

Q.4 **Answer the following. (Any Two)** **06**
   a) State the seismic zones on the globe.
   b) State the various types of faulting with schematic diagram.
   c) State the concept of Wegener's continental drift theory.

Q.5 **Answer the following. (Any One)** **06**
   a) Describe the scientific classification of interior earth.
   b) Describe the types of fold with schematic diagram.

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Set P

B.Sc. (Plain) (Semester - I) (New) (NEP CBCS) Examination:
March/April - 2025
Electronics - I
Digital Fundamentals (G04-0105)

Day & Date: Thursday, 15-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 Choose the correct alternative   **06**

1) The radix of the hexadecimal number system is _____
   a) 10   b) 16
   c) 2   d) F

2) The full form of ASCII code is ____
   a) American Standard Code for Internet Interchange
   b) American Standard Code for Internet Interconnect
   c) American Standard Code for Information Interconnect
   d) American Standard Code for Information Interchange

3) _____ is used as Gray to Binary conversion.
   a) OR gate   b) AND gate
   c) XOR gate   d) NOT gate

4) The Excess-3 Code of binary 1001 is _____
   a) 1100   b) 0110
   c) 1001   d) 1010

5) In a sign binary number representation minus sign is indicated by _____
   a) 0   b) 1
   c) *LSB*   d) Parity

6) _____ IC is also called as Hex Inverter.
   a) 7400   b) 7408
   c) 7432   d) 7404

Q.2 Answer the following. (Any Three)   **06**
   a) Define radix of number system. State radix of octal and decimal number system.
   b) Enlist weighted and unweighted code.
   c) Draw a pin diagram of IC 7400.
   d) State the binary subtraction rule.
   e) State the OR law & AND law.

Q.3 **Answer the following. (Any Two)**   **06**
   a) Convert $(27)_{10}$ into Binary and Octal number.
   b) Explain in brief half adder.
   c) Reduce the logic equation by using K-map
       $Y=AB\bar{C}+ A\bar{B}\bar{C} + \bar{A}B\bar{C} + \bar{A}\bar{B}\bar{C}$

Q.4 **Answer the following. (Any Two)**   **06**
   a) Perform the BCD addition of (27) and (18)
   b) State any three rules and laws of Boolean algebra.
   c) State the De Morgan's theorems with their logic equations.

Q.5 **Answer the following. (Any One)**   **06**
   a) With logic diagram explain the working of Half and Full subtractor.
   b) Why NOR / NAND gate is called as Universal Building Block?
       Construct basic gates by using NAND gate.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Physics
Solar Energy and Solar Technology (G04-GE-OE-201)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
2) Draw neat diagrams and give equations wherever necessary.
3) Figures to the right indicate full marks.
4) Use of logarithmic table and calculator is allowed.

Q.1 Choose the correct alternatives from the options.   06

1) _____ is an example of a primary energy source.
a) Electricity   b) Biomass
c) Hydrogen fuel cell   d) Steam

2) _____ is the main component of the Sun's composition
a) Oxygen   b) Helium
c) Hydrogen   d) Carbon

3) _____ does mean the term "Photovoltaic".
a) Electricity generated by wind
b) Light and electricity
c) Energy from water
d) Heat and electricity

4) _____ is the main advantage of a grid-tied solar PV system.
a) It does not require batteries
b) It can store power indefinitely
c) It provides power during the night
d) It is more expensive

5) _____ type of Solar cooker uses multiple mirrors to increase solar energy input.
a) Box-type solar cooker   b) Parabolic solar cooker
c) Flat plate solar cooker   d) Solar reflector cooker

6) _____ fluid is commonly used in an indirect solar water heating system.
a) Water   b) Air
c) Antifreeze   d) Oxygen

Q.2   Answer of the following. (Any Three)   **06**
    a)   What are two examples of renewable energy sources?
    b)   What is solar constant?
    c)   Name the two types of semiconductor materials used in solar cells.
    d)   Name the two types of solar PV systems.
    e)   Write down the uses of solar cooker.

Q.3   Write short answers. (Any Two)   **06**
    a)   Explain V-I characteristic curve of solar cell.
    b)   Explain Solar PV module and PV arrays.
    c)   Write note on solar furnace.

Q.4   Answer of the following. (Any Two)   **06**
    a)   Explain applications of solar cell.
    b)   Write a note on disadvantages of solar PV system.
    c)   Write note on Solar Dryer.

Q.5   Answer of the following. (Any One)   **06**
    a)   Explain how energy is classified based on its origin (primary &
        secondary) & availability (renewable & non-renewable).
    b)   Illustrate the solar spectrum at sea level on a clear day being affected
        by atmosphere.

Seat No.	

Set **P**

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Chemistry - II
Chemistry in Daily Life (G04-GE-OE-202)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
2) Draw neat diagrams and give equations wherever necessary.
3) Figures to the right indicate full marks.
4) Use of logarithmic table and calculator is allowed.

Q.1   Choose the correct alternatives from the options.   06

1) What is the common chemical used in toothpaste as an abrasive?
a)   Sodium bicarbonate   b)   Calcium carbonate
c)   Silica   d)   All of the above

2) Which of the following methods can be used to detect caffeine in coffee and tea?
a)   Chromatography   b)   Spectrophotometry
c)   Titration   d)   All of the above

3) What is the purpose of adding preservatives to beverages?
a)   To improve flavor   b)   To increase shelf life
c)   To enhance texture   d)   To reduce cost

4) What is adulteration in food products?
a)   Intentional addition of unwanted substances
b)   Unintentional contamination during processing
c)   Natural spoilage of food
d)   Addition of nutrients to food

5) What is the purpose of adding artificial sweeteners to food products?
a)   To improve texture   b)   To enhance flavor
c)   To reduce calorie content d)   To increase shelf life

6) Which of the following is a type of milk protein?
a)   Casein   b)   Whey protein
c)   Lactalbumin   d)   All of the above

Q.2 Answer of the following. (Any Three) 06
    a) What are the common chemicals used in toothpaste?
    b) Describe the composition of milk and its various constituents.
    c) Describe the common adulterants found in milk.
    d) Give any two examples of bulking agents in with their uses.
    e) Which of the minerals are present in milk?

Q.3 Write short answers. (Any Two) 06
    a) Explain the importance of food texture modifiers in food processing and preservation.
    b) Describe the common adulterants found in coffee powder and their detection methods.
    c) Explain methods for fat analysis in milk & butter.

Q.4 Answer of the following. (Any Two) 06
    a) Describe the composition and uses of face powder.
    b) Write a note on analysis of caffeine in coffee & Tea.
    c) Describe the different types of food flavor enhancers and their uses.

Q.5 Answer of the following. (Any One) 06
    a) Explain estimation of methyl alcohol in alcoholic beverages.
    b) Describe the common adulterants found in spices and their detection methods.

Seat No.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Botany
Floriculture & Landscape Gardening (G04-GE-OE-0203)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 PM To 10:30 PM

Instructions: 1) All questions are compulsory.
                        2) Draw neat diagrams and give equations wherever necessary.
                        3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options.   06
   1)   The ideal stage to cut the majority of flowers is just _____.
      a)   before flower is fully open   b)   in the bud stage
      c)   after flower is fully open   d)   there is not an ideal stage

   2)   A cluster of flowers on a stem is _____.
      a)   solitary flower   b)   pistil
      c)   inflorescence   d)   pedicel

   3)   The most widely used method of asexual propagation in the floriculture industry is _____ cutting.
      a)   Bud   b)   Stem
      c)   Calyx   d)   Corolla

   4)   Generally, roses are graded according to the _____ of stem.
      a)   length   b)   thorn count
      c)   size   d)   diameter at base

   5)   The rock garden also named as _____.
      a)   Fernery   b)   Orchards
      c)   Rockery   d)   Arborary

   6)   The plants with a life span of more than two years is called _____.
      a)   Annuals   b)   Biennials
      c)   Perennials   d)   Ephemerals

Q.2 Answer of the following. (Any Three)   06
   a)   Define floriculture.
   b)   Define Landscaping.
   c)   What is mean by terrace gardening?
   d)   What is the meaning by Annuals?
   e)   Define Bonsai.

Q.3   Write short answers. (Any Two) 06
  a)   Describe the tree planting schemes in garden landscaping.
  b)   Mention propagation methods of perennial garden plants.
  c)   Give the importance of landscaping.

Q.4   Answer of the following (Any Two) 06
  a)   Mention the techniques of Bonsai preparation.
  b)   Enlist the annual plants for garden.
  c)   Give the criteria for pot plant selection.

Q.5   Answer of the following (Any One) 06
  a)   Describe the management of lawn.
  b)   Mention the importance and selection of climbers and creepers.

Seat No.	

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Zoology
Human Nutrition and Health (G04-GE-204)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   **06**
     1) _____ is storage form of carbohydrates in animals.
         a) Starch   b) Chitin
         c) Enzyme   d) Cellulose

     2) _____ is the fat-soluble vitamin.
         a) Vitamin B   b) Vitamin K
         c) Vitamin B12   d) Vitamin C

     3) _____ mineral is responsible for the RBCs production.
         a) Iron   b) Phosphorous
         c) Zinc   d) Calcium

     4) Kwashiorkor is the _____ deficiency diseases.
         a) Lipid   b) Carbohydrate
         c) Protein   d) Mineral

     5) _____ is the bacterial disease.
         a) Cholera   b) HIV
         c) Malaria   d) Polio

     6) _____ is a potential impact of junk food on mental health.
         a) Improved mood and focus   b) Increased anxiety and depression
         c) Better slip quality   d) Reduced stress levels

Q.2 Answer of the following. (Any Three)   **06**
     a) Sources of carbohydrates
     b) Night blindness
     c) Tobacco addiction
     d) Obesity
     e) Meditation

Q.3   Write short answers. (Any Two)   **06**
   a)   Importance of calcium
   b)   Explain water soluble vitamins.
   c)   Describe any three vaccines for humans.

Q.4   Answer of the following (Any Two)   **06**
   a)   Significance of proteins in human health
   b)   Describe anemia.
   c)   Role of Yoga in human health

Q.5   Answer of the following (Any One)   **06**
   a)   Describe importance of balanced diet.
   b)   Give effects of junk food on health.

Seat No.	

**B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Mathematics
Logical Reasoning (Verbal) (G04-GE-OE-210)**

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternative for each of the following.   06
   1) Newspaper : Press :: Cloth : ?
       a) Tailor   b) Fibre
       c) Factory   d) Milk

   2) Choose the word which is least like the other words in the following group.
       a) Curd   b) Butter
       c) Oid   d) Cheese

   3) Choose the word which is least like the other word in the following group.
       a) Geometry   b) Algebra
       c) Trigonometry   d) Mathematics

   4) Choose the old pair of words.
       a) Volume : Litre   b) Time : Seconds
       c) Resistance : Ohm   d) Pressure : Barometer

   5) Choose the group of letters which is different from others.
       a) BD   b) IK
       c) PN   d) SU

   6) Which number would replace question mark in the series 7,12,19, ?, 39.
       a) 29   b) 28
       c) 26   d) 24

Q.2 Answer any three of the following.   06
   a) If in a certain language MYSTIFY is coded as NZTUJGZ, how is NEMESIS coded in that language?
   b) If PAINT is coded as 74128 and EXCEL is coded as 93596, then how would you encode ACCEPT?
   c) Anil introduces Rohit as the son of the only brother of his father's wife. Explain how is Rohit related to Anil?
   d) A man is facing west. He turns 45^0 in the clockwise direction and then another 180^0 in the same direction and then 270^0 in the anticlockwise direction. Find direction is the facing now?

e) Indicate the best relation between Earth, Sea and Sun using Venn Diagram.

Q.3 **Attempt any two of the following.** **06**
  a) Find out
    1) Which term comes next in the sequence:

$$nd, \ iy, \ dt, \ yo, \ tj, ?$$

    2) If 'tee see pee' means 'Drink fruit juice' and 'see kee lee' mean 'Juice is sweet' and 'lee ree mee' means 'He is intelligent'. Which word in that language means 'Sweet'?

  b) 1) When the minute hand covers a distance of 1h 20min, then what is the angular distance covered by it?
    2) What is the angle traced by hour hand in 15 min?

  c) One day, Ravi left home and cycled 10 km southwards, turned right and cycled 5 km and turned right and cycled 10 km and turned left and cycled 10 km. How many kilometers will he have to cycle to reach his home straight?

Q.4 **Attempt any two of the following.** **06**
  a) 1) Which year will have the same calendar as that of 2012?
    2) If 15th august 2011 was Monday, what day of the week was on 17th September, 2011.

  b) What should come in the place of question mark (?) in the following alpha-numeric series?
    1) P1F, R2E, T6D, V24C, ?
    2) C5, F4, E7, H6, ?

  c) Read the following information and answer the following questions.
    1) Six friends are A, B, C, D, E and F are sitting in a closed circle facing the centre.
    2) E is to the left of D.
    3) C is between A and B.
    4) F is between E and A.
    Then
      i) Who is to the left of B?
      ii) Who is to the right of C?
      iii) Which of the above given statement is superfluous?

Q.5 **Attempt any one of the following.** **06**
  a) Read the following information carefully and answer the questions that follow.
    There are six cities A, B, C, D, E and F
    A is not a hill station.
    B and E are not historical place.
    D is not an industrial city.
    A and D are not historical cities.
    A and B are not alike.

    i)   Which cities are industrial centers?
    ii)   Which two cities are historical places?
    iii)   Which cities are hill stations?

b)   Arrange the following in a meaningful sequence.
    i)   a) Consultation
           b) Illness
           c) Doctor
           d) Treatment
           e) Recovery

    ii)   a) Family
           b) Community
           c) Member
           d) Locality
           e) Country

    iii)   a) Euphoria
           b) Happiness
           c) Ambivalence
           d) Ecstasy
           e) Pleasure

Seat No.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Statistics
Sample Survey Techniques (G04-GE-OE-211)

Day & Date: Friday, 16-May-2025　　　　　　　　　　　　Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1　Choose the correct alternatives from the options.　　　　　06

1) A survey by using complete enumeration method is known as _____.
　　a)　Pilot survey　　　　　　　　b)　Census survey
　　c)　Sample survey　　　　　　　d)　None of the above

2) A Sample consists of _____.
　　a)　All units of the population
　　b)　50 percent units of the population
　　c)　5 percent units of the population
　　d)　Any fraction of the population

3) Stratified random sampling belongs to the category of _____.
　　a)　judgment sampling　　　　　b)　subjective sampling
　　c)　controlled sampling　　　　　d)　probability sampling

4) A list of voters or a list of households in sampling is an example of _____.
　　a)　Population frame　　　　　　b)　Sampling frame
　　c)　Census frame　　　　　　　d)　None of these

5) A selection procedure of a sample having no involvement of probability is known as _____.
　　a)　purposive sampling　　　　　b)　judgment sampling
　　c)　subjective sampling　　　　　d)　all the above

6) The number of possible samples of size n out of N population units without replacement is _____.
　　a)　$\binom{N}{n}$　　　　　　　　b)　N^n
　　c)　n^2　　　　　　　　　　　d)　$n!$

Q.2 Answer of the following. (Any Three)   **06**
  a) Define sampling unit and sampling frame.
  b) Explain any two advantages of sampling over census method.
  c) Describe systematic sampling.
  d) Describe Educational surveys.
  e) Explain simple random sampling.

Q.3 Write short answers. (Any Two)   **06**
  a) State characteristics of good questionnaire.
  b) Explain probability and non-probability sampling.
  c) Explain procedure of stratified sampling.

Q.4 Answer of the following (Any Two)   **06**
  a) Define non- sampling error.
  b) Explain real life situations where cluster sampling is appropriate.
  c) Explain simple random sampling without replacement.

Q.5 Answer of the following (Any One)   **06**
  a) Describe stratified sampling. Obtain an unbiased estimator for population mean.
  b) Explain principal steps in sample survey.

Seat No.

Set **P**

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Computer Science
Introduction to Internet and Web Design (G04-GE-0208)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   **06**
   1) The concept of the internet was originated in _____.
   a) 1970   b) 1969
   c) 1971   d) 1981

   2) In HTML, the tags are _____.
   a) in upper case   b) case-sensitive
   c) in lowercase   d) not case sensitive

   3) Which element is used to get highlighted text in HTML5?
   a) <u>   b) <mark>
   c) <highlight>   d) <b>

   4) Which of the following tag is used to embed css in html page?
   a) <css>   b) <!DOCTYPE html>
   c) <script>   d) <style>

   5) Which of the following property is used to align the text in a table?
   a) text-align   b) align
   c) text   d) None of the mentioned

   6) Which one of the following is an example of an 'internet search engine?
   a) LINUX   b) Google
   c) MS Word   d) Windows

Q.2 Answer of the following. (Any Three)   **06**
   a) What is a marquee?
   b) What are the advantages of CSS?
   c) What is internet?
   d) What is the role of formatting tags in HTML5?
   e) How can we add comments in CSS?

Q.3 Write short answers. (Any Two) 06
  a) What is website & how it works?
  b) Difference between HTML & HTML5.
  c) Explain CSS selectors.

Q.4 Answer of the following (Any Two) 06
  a) Explain Border properties.
  b) Explain formatting tags.
  c) What is Hyperlink? Explain its target Attribute.

Q.5 Answer of the following (Any One) 06
  a) Explain CSS types with example.
  b) What is list? Explain its types.

Seat No.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Electronics
Basic Study of Domestic Electronic Appliance (G04-GE-OE-205)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   **06**
   1) In India the frequency of ac for domestic supply is _____.
      a) 60 Hz   b) 10 Hz
      c) 50 Hz   d) 100 Hz

   2) The capacity oof washing machine is given in _____.
      a) Tones   b) Newton
      c) Joule   d) Kilogram

   3) _____ created the washing action.
      a) Turbulence   b) Energy
      c) Electricity   d) Water supply

   4) _____ frequency is used for heating purpose in the microwave oven.
      a) 2.45 KHz   b) 2.45 GHz
      c) 2.45 MHz   d) 2450 Hz

   5) The primary function of a water filter is _____.
      a) To boil water   b) To cool water
      c) To purify water   d) To store water

   6) The primary function of the refrigerator is _____.
      a) To heat food   b) To dry food
      c) To cook food   d) To preserve food by cooling

Q.2 Answer the following. (Any Three)   **06**
   a) State working principle of solar system.
   b) State working principle of water heater.
   c) Give the types of microwave ovens.
   d) Enlist different parts of Mixer Grinder.
   e) Give the difference between front loading and top loading washing machine.

Q.3 Answer the following. (Any Two)   06
   a) Explain in brief the working principle of TV remote.
   b) Give the difference between AC and DC.
   c) State the Safety tips for handling ac mains appliances.

Q.4 Answer the following (Any Two)   06
   a) State the applications of multimeter.
   b) Explain in brief the working principle of microwave oven.
   c) Explain basic principle of LED bulb and tube.

Q.5 Answer the following (Any One)   06
   a) What is alternating current? Define the Voltage, Current, Time period, frequency, and power of the ac signal.
   b) Explain working of the Inverter and UPS.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Microbiology
Food and Dairy Microbiology (G04-GE-OE-206)

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   **06**
     1) _____ of the following is an example of perishable food.
        a) Meat   b) Sugar
        c) Cereals   d) Salt

     2) _____ foods are preserved by using salt.
        a) Milk   b) Pickles
        c) Grains   d) Eggs

     3) Pasteurization is the important process required in _____ industry.
        a) sugar   b) food
        c) dairy   d) paper

     4) _____ is an example of Fermented milk product.
        a) Yoghurt   b) Bread
        c) Idli   d) Sugar

     5) _____ is the primary purpose of food preservation.
        a) To increase the food weight   b) To extend the shelf life of the food
        c) To enhance food flavor   d) To reduce food nutrients

     6) _____ organism is mainly used for preparation of Curds.
        a) *E.coli*   b) *Mycobacterium*
        c) *Bacillus*   d) *Lactobacillus*

Q.2 Answer of the following. (Any Three)   **06**
     a) Define milk and give composition of milk.
     b) Enlist the requirements for setting of dairy industry.
     c) Enlist different types of food
     d) Write different causes of food spoilage
     e) Role of Microbiologists in food and dairy industry.

Q.3   Write short answers. (Any Two)   **06**
   a)   Define spoilage and explain spoilage of different foods.
   b)   Write about opportunities in food industry.
   c)   Explain various spoilages in milk with example.

Q.4   Answer of the following (Any Two)   **06**
   a)   Define fermentation and describe different fermented food products.
   b)   Write a note on general principles of food preservation.
   c)   Define food and explain general changes caused by microorganisms.

Q.5   Answer of the following (Any One)   **06**
   a)   What is food preservation? Describe any four methods of food
          preservation.
   b)   Write in detail on Fermented milk products.

Seat No.

**B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Geography
Geography of Maharashtra – II (G04-GE-OE-207)**

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternatives from the options.   06
   1) The population is _____ Distributed in Maharashtra.
     a) Even   b) Uneven
     c) Constant   d) None of these

   2) The lowest density of the population reported from _____District.
     a) Satara   b) Nashik
     c) Mumbai   d) Gadchiroli

   3) As per Census 2011, the urban sex ratio is _____ Female per 1000 male.
     a) 603   b) 703
     c) 803   d) 903

   4) The age group of 15 to 59 years is known as_____.
     a) workers   b) dependency
     c) child   d) old

   5) The proportion of male and female population is called _____.
     a) Sex ratio   b) Fertility
     c) Age composition   d) Mortality

   6) The lowest population district in Maharashtra is _____.
     a) Dhule   b) Jalgaon
     c) Sindhudurg   d) Thane

Q.2 Answer of the following. (Any Three)   06
   a) State the causes of migration.
   b) Define population density.
   c) Write the name of factors affecting literacy.
   d) Define sex ratio.
   e) Write the name of occupation in rural population.

Q.3 **Write short answers. (Any Two)** 06
    a) Define migration.
    b) State remedies of population growth.
    c) Densely populated District in Maharashtra.

Q.4 **Answer of the following (Any Two)** 06
    a) Explain the rural and urban population.
    b) Describe the Age composition.
    c) Write the types of migration.

Q.5 **Answer of the following (Any One)** 06
    a) Explain the physical factors affecting the distribution of population.
    b) Explain the problems of population growth in Maharashtra.

Seat No.

Set **P**

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Geology
Environmental Geology (G04-GE-OE-0209)

वार, दिनांक : शुक्रवार, १६-०५-२०२५   कमाल गुण: ३०
वेळ: सकाळी ०९:०० ते १0:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
              २) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ रिकाम्या जागा भरा.   ०६

१)   नैऋत्य मान्सूनचा पावसाळा ———.
      अ) जून – सप्टेंबर   ब) जून – डिसेंबर
      क) जुलै – डिसेंबर   ड) यापैकी सर्व

२)   ——— आपत्ती मानवनिर्मित आहेत.
      अ) अपघात   ब) युद्ध
      क) रासायनिक स्फोट   ड) यापैकी सर्व

३)   ——— समुद्राच्या तळाशी भूकंपांमुळे महासागराच्या लाटा निर्माण होतात.
      अ) त्सुनामी   ब) लांब किनाऱ्यावरील प्रवाह
      क) भूकंपाच्या लाटा   ड) यापैकी नाही

४)   ——— क्षेत्र पृथ्वीभोवती पाण्याची उपस्थिती दर्शवते.
      अ) जलमंडल   ब) लिथोस्फियर
      क) बायोस्फियर   ड) यापैकी सर्व

५)   पृथ्वीच्या सुमारे पाण्याच्या महासागरात समावेश आहे.
      अ) ९५%   ब) ९७%
      क) ३%   ड) ९९.९९%

६)   अंटार्क्टिका कायमस्वरूपी ——— आहे.
      अ) नद्या   ब) महासागराचे पाणी
      क) बर्फाचे थर   ड) यापैकी सर्व

प्र.२ खालील प्रश्नांची उत्तरे लिहा. (कोणतेही तीन)   ०६
      १) जैव–गोलाची व्याख्या करा.
      २) नैसर्गिक आपत्तींची कोणतीही दोन नावे द्या.

३) भारतीय उपखंडात मान्सूनचे महत्त्व सांगा.

४) भूकंपाची व्याख्या करा.

५) पर्यावरण म्हणजे काय?

प्र.३ **खालील प्रश्नांची उत्तरे लिहा. (कोणतेही दोन)** **०६**

१) जलचक्र स्पष्ट करा.

२) वायू प्रदूषणाचे परिणाम स्पष्ट करा.

३) भारतीय मान्सूनवर एक टीप लिहा.

प्र.४ **खालील प्रश्नांची उत्तरे लिहा. (कोणतेही दोन)** **०६**

१) लिथोस्फीअरची रचना सांगा.

२) ज्वालामुखीचे परिणाम यावर एक टीप लिहा.

३) हरितगृह परिणामाची कारणे स्पष्ट करा.

प्र.५ **खालील प्रश्नांची उत्तरे लिहा. (कोणताही एक)** **०६**

१) मातीची व्याख्या करा. मातीची प्रोफाइल सांगा.

२) वातावरणाच्या कोणत्याही दोन क्षेत्रांचे वर्णन करा.

Seat No.

**B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Geology
Environmental Geology (G04-GE-OE-0209)**

Day & Date: Friday, 16-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

Instructions: 1) All questions are compulsory.
2) Draw neat & labelled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1   Choose the correct alternatives from the options.   06

1)   The Rainy Season of South-West monsoon range from _____.
a)   June – September   b)   June – December
c)   July – December   d)   All of these

2)   _____ Disaster represent human-made.
a)   Accidents   b)   War
c)   Chemical Explosions   d)   All of these

3)   _____ Oceans waves are generated due to earthquakes at sea bottom.
a)   Tsunamis   b)   Longshore Currents
c)   Seismic waves   d)   None of these

4)   The _____ Domain of the earth represent presence of water around earth.
a)   Hydrosphere   b)   Lithosphere
c)   Biosphere   d)   All of these

5)   About _____ of the Earth's water is present in Ocean.
a)   95%   b)   97%
c)   3%   d)   99.99%

6)   Antarctica is permanently covered with _____.
a)   rivers   b)   ocean water
c)   ice sheets   d)   all of these

Q.2   Answer of the following. (Any Three)   06
a)   Define Bio-sphere.
b)   Give any two names of Natural disasters.
c)   Give importance of monsoon in Indian sub-continent.
d)   Define the earthquake.
e)   What is Environment?

Q.3 **Write short answers. (Any Two)** 06
    a) Explain Hydrological Cycle.
    b) Describe Effects of Air Pollution.
    c) Write a note on - Indian Monsoon.

Q.4 **Answer of the following (Any Two)** 06
    a) Describe composition of Lithosphere.
    b) Write a note on - Effects of volcanism.
    c) Explain causes of Green house effect.

Q.5 **Answer of the following (Any One)** 06
    a) Define Soil. Describe Soil profile.
    b) Describe any two zones of Atmosphere.

Seat No.		Set	P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Environmental Science
Divisions of the Environment (G04-GE-OE-212)

Day & Date: Friday, 16-May-2025　　　　　　　　Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1　Choose the correct alternatives from the options.　　　　06
　　1)　The term biosphere refers to _____.
　　　　a)　Rocks and minerals　　　　b)　Plants and animals
　　　　c)　Water sources　　　　　　d)　Atmosphere and lithosphere

　　2)　The lowest layer of the atmosphere is _____.
　　　　a)　Stratosphere　　　　　　b)　Mesosphere
　　　　c)　Ionosphere　　　　　　　d)　Troposphere

　　3)　How much percentage of the Earth is covered with water, approximately?
　　　　a)　15%　　　　　　　　　　b)　20%
　　　　c)　17%　　　　　　　　　　d)　71%

　　4)　What is the name of the deepest layer of the soil profile, from which the soil is formed?
　　　　a)　Topsoil　　　　　　　　b)　Subsoil
　　　　c)　Bedrock　　　　　　　　d)　Organic matter

　　5)　Which biome has mainly coniferous trees?
　　　　a)　Taiga　　　　　　　　　b)　Rain forest
　　　　c)　Savannah　　　　　　　d)　Lake

　　6)　Where would photosynthesis occur in water biomes?
　　　　a)　At the bottom　　　　　b)　In the middle
　　　　c)　In the air above it　　　d)　Near the surface

Q.2　Answer of the following. (Any Three)　　　　06
　　a)　Define Thermosphere.
　　b)　Write note on sedimentary rock.
　　c)　What is climate.
　　d)　Write note on formation of Ice Caps.
　　e)　Write Types of Aquifers.

Q.3   Write short answers. (Any Two)   **06**
    a)   Write mineralogical properties of soil.
    b)   Write characteristics of Tropical rain forest.
    c)   Write note on ground water potential.

Q.4   Answer of the following (Any Two)   **06**
    a)   Write note on Terrestrial Biomes.
    b)   Write note on human usage of surface and Ground water.
    c)   Explain soil profile.

Q.5   Answer of the following (Any One)   **06**
    a)   Write Atmospheres Chemical composition.
    b)   Write note on Soil Biota.

Seat No.

Set **P**

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
English/ English for Communication – II (ENG-201)

Day & Date: Saturday, 17-May-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

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

Q.1 Choose the correct alternative from the given options. 06
  1) What is the main difference between listening and hearing?
    a) Listening is active hearing is passive
    b) Hearing is better than listening
    c) Listening does not need attention
    d) Hearing requires interpretation

  2) Which skill helps improve communication?
    a) Ignoring details   b) Active listening
    c) Speaking continuously   d) Multitasking

  3) What is the first step in the listening process?
    a) Responding   b) Evaluating
    c) Receiving   Remembering

  4) Which of the following is not a type of formal writing?
    a) Formal letters   b) Newspaper Reports
    c) Personal diary entries d) E-mails

  5) What should be avoided in a formal letter?
    a) Professional tone
    b) Clear purpose
    c) Slang and informal language
    d) Proper salutations

  6) What is the first element of a newspaper report?
    a) Conclusion   b) Headline
    c) Supporting details d) Salutations

Q.2 Answer any three out of the following. 06
  a) Why is listening important in communication?
  b) What is the role of tone in spoken English?
  c) What is mean by blog?
  d) What is formal letter?
  e) Write the definition of listening.

Q.3 Write short notes. (Any Two)   **06**
  a) Define listening and explain the five stages of the listening process.
  b) Write the short on the common barriers to listening.
  c) What are the effective ways to improve listening skills.

Q.4 Write board answer. (Any One)   **12**
  a) Write a note on types of listening.
  b) What is newspaper report? Explain its formal and Key features.

Seat No.		Set	P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Environmental Science (ENS24)

Day & Date: Monday, 19-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1   Choose correct alternative.   **06**
   1)   The gas primarily responsible for global warming is _____.
   a)   Oxygen   b)   Nitrogen
   c)   Carbon dioxide   d)   Hydrogen

   2)   _____ is a non-renewable resource.
   a)   Solar energy   b)   Coal
   c)   Wind energy   d)   Biomass

   3)   _____ is considered a renewable resource.
   a)   Solar Energy   b)   Natural Gas
   c)   Coal   d)   Petroleum

   4)   _____ is the term used to describe the gradual process of species extinction due to human activity.
   a)   Overexploitation   b)   Habitat destruction
   c)   Natural selection   d)   Biodiversity loss

   5)   The primary cause of air pollution in most urban areas is _____.
   a)   Industrial activity and vehicular emissions
   b)   Agricultural practices
   c)   Natural forest fires
   d)   Ocean currents

   6)   Most observed consequence of ozone layer depletion is _____.
   a)   Reduced agricultural productivity
   b)   Decreased rainfall
   c)   Increased skin cancer rates
   d)   Lower global temperatures

Q.2   Answer the following. (Any three)   **06**
   a)   Describe India as a mega-biodiversity nation.
   b)   Describe Multidisciplinary nature of environmental studies.
   c)   Differentiate between floods and draughts.
   d)   Describe Environment Protection Act in brief.
   e)   Give brief idea of Silent valley movement.

Q.3 Answer the following. (Any two) 06
   a) Importance of environmental studies
   b) Forest Ecosystem
   c) Air Pollution

Q.4 Answer the following. (Any two) 06
   a) Deforestation: Causes and Impacts
   b) Biogeographic zones of India
   c) Conservation of Biodiversity

Q.5 Answer the following. (Any one) 06
   a) Write in detail on the importance of Renewable and Non-renewable energy resources.
   b) What is Disaster? Describe disaster management with respect to flood and earthquakes.

B. Sc. (सत्र – II) (नवीन) (NEP CBCS) परीक्षाः मार्च/एप्रिल – २०२५
Co-Curricular Course
National Service Scheme (CC-201)

वार, दिनांक : बुधवार, २१-०५-२०२५   कमाल गुण: ३०
वेळ: सकाळी ०९:०० ते १०:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
             २) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ **खालील दिलेले योग्य पर्याय निवडून गाळलेल्या जागा भरा.**   ०६

१) ——— हा दिवस जागतिक पर्यावरण दिन म्हणून साजरा केला जातो.
    अ) २४ सप्टेंबर   ब) १२ जानेवारी
    क) १५ ऑगस्ट   ड) ०५ जून

२) रा. से. यो. चिन्ह चक्र हे ——— रंगाचे आहे.
    अ) हिरवा   ब) लाल
    क) पिवळा   ड) निळा

३) राष्ट्रीय सेवा योजनेची सुरूवात ——— या वर्षी झाली.
    अ) १९७५   ब) १९५०
    क) १९६९   ड) १९४७

४) राष्ट्रीय सेवा योजनेच्या एका वर्षात ——— तास काम करणे अपेक्षित असते.
    अ) १००   ब) २४०
    क) ८०   ड) १५०

५) दत्तक खेडे हे ——— कि.मी. अंतरावर असावे अशी अपेक्षा आहे.
    अ) २०   ब) ३०
    क) १८   ड) ४०

६) ——— हे राष्ट्रीय सेवा योजनांचे घोषवाक्य आहे.
    अ) मी माझ्यासाठी नाही इतरांसाठी
    ब) मी फक्त माझ्यासाठी
    क) मी फक्त समाजासाठी
    ड) मी फक्त माझ्या आर्थिकसाठी

प्र.२ खालील प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही तीन) ०६
१) महिला सक्षमीकरणाची गरज का आहे.
२) प्रथमोपचार कौशल्याची माहिती सांगा.
३) रा. से. या. कार्यक्रमाचे वर्गीकरण सांगा.
४) वृक्षरोपणाची आवश्यकता का आहे.
५) राष्ट्रीय सेवा योजनेच्या डायरी (नोंदवही) ची देखभाल लिहा.

प्र.३ खालील प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही दोन) ०६
१) रा. से. यो. चा इतिहास लिहा.
२) दत्तक खेड्यामध्ये नियमित उपक्रमावर चर्चा करा.
३) मतदार जनजागृती आणि नावनोंदणी शिबीर यावर चर्चा करा.

प्र.४ दीर्घोत्तरी प्रश्न. (कोणताही एक) ०६
१) रा. से. यो. चे महत्व स्पष्ट करा.
                 किंवा
२) विशेष शिबिर कार्यक्रमातील नियोजन लिहा.

प्र.५ दिर्घोत्तरी प्रश्न. ०६
आरोग्य आणि रक्तदान शिबीर यावर वृत्तांत द्या.

Seat No.	

**B. Sc. (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Co-Curricular Course
National Service Scheme (CC-201)**

Day & Date: Wednesday, 21-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct Alternative and fill in the blanks   **06**
    1) _____ is celebrated as the World Environment Day.
       a) 24th September   b) 12th January
       c) 15th August   d) 05th June

    2) The N.S.S. emblem, the chakra bears _____ colour.
       a) Green   b) Red
       c) Yellow   d) Blue

    3) The National Service Scheme is started in the year of _____.
       a) 1975   b) 1950
       c) 1969   d) 1947

    4) _____ is the number of hours the N.S.S. volunteers expected to work during the year.
       a) 100   b) 240
       c) 80   d) 150

    5) The adopted village is expected to be _____ k.m.
       a) 20   b) 30
       c) 18   d) 40

    6) _____ is a motto of N.S.S.
       a) Not me but you   b) I m only me
       c) I and we   d) I only me economic

Q.2 Write a short answer (Any Three)   **06**
    a) Why need is Women empowerment.
    b) State of First Aid Skill Activity.
    c) State the Classification of NSS Programme.
    d) Why is important of Tree Planation.
    e) Write the maintenance of NSS dairy.

Q.3 **Write short answers (Any Two)** **06**
    a) Write the History of NSS.
    b) Discuss the Regular activities in Adopted Village.
    c) Discuss the Voter Awareness and Registration Camp.

Q.4 **Broad Questions. (Any One)** **06**
    a) Explain the Importance of NSS.
    b) Write the Planning of Special Camping Programme.

Q.5 **Broad Question.** **06**
Give account of a Health and Blood Donation Camp.

Seat No.

B.Sc. (सत्र – II) (नवीन) (NEP CBCS) परीक्षाः मार्च/एप्रिल – २०२५
Co-Curricular Course
National Cadet Corps (CC-202)

वार, दिनांक : बुधवार, २१-०५-२०२५   कमाल गुण : 15
वेळ: सकाळी ०९:०० ते १०:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
२) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ खालील दिलेले योग्य पर्याय निवडून गाळलेल्या जागा भरा.   ०४
१) सहानुभूती म्हणजे काय?
अ) जलद निर्णय घेणे
ब) इतर लोकांबद्दल समज आणि करूणा
क) स्पर्धात्मक असणे
ड) कठोर वर्तन

२) व्यक्तिमत्व विकासासाठी आकार देणारे घटक, की ज्यामुळे इतर प्रभावित होतील.
अ) हवामान   ब) शिक्षण
क) लोकसंख्या   ड) व्यायाम

३) खालीलपैकी कोणते रचनात्मक व्यक्तीचे सामान्य लक्षण नाही.
अ) जिज्ञासा   ब) दृढता
क) आळस   ड) कल्पना

४) काही ——— गुण बदलता येत नाहीत.
अ) नविन   ब) दत्तक
क) जन्मजात   ड) नैसर्गिक

प्र.२ खालील प्रश्नांची उत्तरे लिहा. (कोणत्याही दोन)   ०४
१) भारतीय नागरिकाचे मुलभूत अधिकार काय आहेत?
२) वेगवेगळ्या प्रकारची कौशल्ये लिहा.
३) उत्तम नागरिकाच्या चांगल्या सवयी लिहा.
४) प्रामाणिकपणाचे उदाहरणे द्या.

प्र.३ खालील प्रश्नांची उत्तरे लिहा.   ०३
व्यक्तिमत्व विकासाला आकार देणारे घटक लिहा.

प्र.४   खालील प्रश्नांची उत्तरे लिहा. (कोणताही एक)   ०४

अ)   व्यक्तिमत्व विकासामध्ये एन.सी.सी. कॅडेट ची भूमिका स्पष्ट करा.

<div align="center">किंवा</div>

ब)   उत्तम नेतृत्वासाठी महत्वाची मूल्ये स्पष्ट करा.

| Seat No. | | **Set** | **P** |

B.Sc. (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Co-Curricular Course
National Cadet Corps (CC-202)

Day & Date: Wednesday, 21-May-2025   Max. Marks: 15
Time: 09:00 AM To 10:30 AM

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

Q.1   Choose the correct alternatives from the options.   04
   1)   What is the meaning of Empathy?
      a)   Making quick decisions
      b)   Understanding & compassion towards other peoples
      c)   Being competitive
      d)   Strick behavior

   2)   Which one is a crucial factor shaping and influencing personality?
      a)   Weather   b)   Education
      c)   Population   d)   Exercise

   3)   Which of the following leads to poor performance.
      a)   Curiosity   b)   Persistence
      c)   Laziners   d)   Imagination

   4)   Few _____ traits can not changed.
      a)   new   b)   adopted
      c)   inborn   d)   natural

Q.2   Write the following questions (Any Two)   04
   a)   What are the fundamental Rights of citizen of India.?
   b)   Write various types & skills.
   c)   Give the good habits of good citizen.
   d)   Give examples of honesty.

Q.3   Write the Following question   03
   Write down the factors shaping personality development.

Q.4   Write the Following question (Any One)   04
   a)   Explain role of NCC cadet in personality development.

   b)   Explain important values for a good leader.

Seat No.

Set **P**

B. Sc. (सत्र – II) (नवीन) (NEP CBCS) परीक्षाः मार्च ⁄ एप्रिल – २०२५
Co-Curricular Course
Sports (CC-203)

वार, दिनांक : बुधवार, २१-०५-२०२५   कमाल गुण : **15**
वेळ: सकाळी ०९:00 ते १0:३0

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
२) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ खालील दिलेले योग्य पर्याय निवडून गाळलेल्या जागा भरा.   ०४

१) खेळ म्हणजे शारिरीक श्रमाचा ––– समावेश असलेल्या कियाकलापांचा संदर्भ होय.
अ) कौशल्य आणि संघटित नियम ब) स्पर्धा
क) व्यावसायिक यश   ड) वरील सर्व

२) सांघिक खेळ ––– आहेत.
अ) फुटबॉल   ब) स्विमिंग
क) जिमनॅस्टिक्स   ड) कराटे

३) ––– या क्रिडेच्या संकल्पना आहेत.
अ) स्पर्धा
ब) शारिरीक आणि मानसिक फायदे
क) शारिरीक क्रिया आणि कौशल्ये
ड) वरील सर्व

४) पी. टी. उषा ––– खेळाची खेळाडू आहे.
अ) बॅडमिंटन   ब) टेनिस
क) ॲथलेटिक्स   ड) स्विमिंग

प्र.२ टिपा लिहा. (कोणत्याही तीन)   ०६
१) खेळाचे महत्त्व
२) खेळाचा प्राचीन इतिहास
३) खेळाची व्याख्या
४) सांघिक खेळाची यादी
५) खेळाद्वारे शारिरीक विकास

प्र.३ खालील प्रश्नांची उत्तरे लिहा.   ०५

अ)   खेळाची संकल्पना स्पष्ट करा.

ब)   खेळाचे विविध प्रकार स्पष्ट करा.

Seat No.		Set	P

B. Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Co-Curricular Course
Sports (CC-203)

Day & Date: Wednesday, 21-May-2025   Max. Marks: 15
Time: 09:00 AM To 10:30 AM

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

Q.1   Choose the correct alternatives from the options.   04
    1)   Sports refer to physical activities that involve physical effort _____.
        a)   Skill and organized rules   b)   Competition
        c)   Professional success   d)   Above all

    2)   Team games are _____.
        a)   Football   b)   Swimming
        c)   Gymnastics   d)   Karate

    3)   The concepts of sports are _____.
        a)   Competition   b)   Physical and Mental Benefits
        c)   Physical Activity and Skill   d)   Above all

    4)   P. T. Usha is the player of _____Game.
        a)   Badminton   b)   Tennis
        c)   Athletics   d)   Swimming

Q.2   Write short notes. (Any Three)   06
    a)   Importance of Sports
    b)   Ancient History of Sports
    c)   Definition of Sports
    d)   List of Team Sports
    e)   Physical Development in Sports

Q.3   Write the Following question (Any One)   05
    a)   Explain the Concept of Sports.
    b)   Explain about types of Sports.

Seat No.

B.Sc. (Plain) (सत्र – II) (नवीन) (NEP CBCS) परीक्षाः मार्च ∕एप्रिल – २०२५
Co-Curricular Course
Cultural (CC-204)

वार, दिनांक : बुधवार, २१-०५-२०२५   कमाल गुण: ३०
वेळ: सकाळी ०९:०० ते १०:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
            २) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१   योग्य पर्याय निवडा.   ०६

१) ––– चे सादरीकरण जो प्रेक्षकांपर्यंत पोहाचवितो तो अभिनय होय.
    अ) गायक   ब) नट
    क) वादक   ड) नर्तक

२) ––– या ग्रंथाच्या पंधरा अध्यायांमध्ये अभिनयाविषयीचे नियम आणि संकेत विखुरलेले आढळतात.
    अ) महाभारत   ब) रामायण
    क) पाकशास्त्र   ड) नाट्यशास्त्र

३) 'एकांकिका' साहित्य प्रकारात एकूण ––– अंक असतात.
    अ) चार   ब) तीन
    क) एक   ड) दोन

४) ––– म्हणजे लोकांसमोर प्रभावीपणे आणि आकर्षकपणे बालेण्याची कला.
    अ) वक्तृत्व   ब) चित्र
    क) नृत्य   ड) गायन

५) ध्वनिक्षेपकाच्या शोधामुळे लाखो श्रोत्यांना ––– चा लाभ घेता येतो.
    अ) दृश्य   ब) नृत्य
    क) वक्तृत्व   ड) भोजन

६) एखाद्या विशिष्ट विषयावर साधकबाधक चर्चा करणे म्हणजे ––– होय.
    अ) कथाकथन   ब) वादविवाद
    क) काव्यवाचन   ड) अभिनय

प्र.२ खालील प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही दोन)   ०६
    १)   कायिक अभिनया विषयी माहिती लिहा.
    २)   पथनाट्य कला प्रकाराचा परिचय द्या.
    ३)   वाद–विवादाचे स्वरूप स्पष्ट करा.
    ४)   कथाकथन करताना कशी तयारी करावी?

प्र.३ टिप्पणी लिहा.   ०६
काव्यवाचन

प्र.४ तपशीलवार उत्तर लिहा. (कोणताही एक)   १२
    १)   साहित्य कलेच्या सादरीकरणाचे प्रकार कोणकोणते आहेत?
    २)   अभिनयाची संकल्पना स्पष्ट करा.

| Seat No. | | Set | P |

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Co-Curricular Course
Cultural (CC-204)

Day & Date: Wednesday, 21-May-2025   Max. Marks: 30
Time: 09:00 AM To 10:30 AM

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

Q.1   Choose the correct Alternative and fill in the blanks   06
  1)   Acting is the presentation that reaches the audience.
      a) Singer   b) Actor/Nuts
      c) musician   d) dancer

  2)   Rules and instructions about acting are scattered throughout the fifteen chapters of this book.
      a) Mahabharata   b) Ramayana
      c) Culinary Arts   d) Theater Science

  3)   How many act as a literature from one act play?
      a) four   b) three
      c) one   d) two

  4)   It is the art of speaking effectively and engagingly in front of people.
      a) elocution   b) Picture
      c) Dance   d) Singing

  5)   The invention of the loudspeaker opened the doors to millions of listeners can be benefited are
      a) scene   b) Dance
      c) Oratory   d) Food

  6)   Discussing the pros and cons of a particular topic means
      a) Storytelling   b) Debate
      c) poetry reading   d) Acting

Q.2   Write a short answer (Any Two)   06
  a)   Write information about physical performance.
  b)   Introduce the art form of street theatre.
  c)   Explain the nature of debate.
  d)   How to prepare for storytelling?

Q.3 Write short note.   **06**
Poetry reading

Q.4 Write a detailed answer. (Any One)   **12**
   a)   What are the types of presentation of literary art?
   b)   Explain the concept of acting.

Seat No.

B. Sc. (सत्र – II) (नवीन) (NEP CBCS) परीक्षाः मार्च/एप्रिल – २०२५
Co-Curricular Course
Health, Wellness and Fitness (CC-205)

वार, दिनांक : बुधवार, २१-०५-२०२५   कमाल गुण: १५
वेळ: सकाळी ०९:०० ते १०:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.
       २) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१ योग्य पर्याय लिहा.   ०४

१) एन. आय. एच. ही संस्था ――― संबंधित कार्य करते.
    अ) आरोग्य   ब) खेळ
    क) व्यवसाय   ड) यापैकी नाही

२) ――― हा जीवनसत्व प्रकार नाही.
    अ) अ   ब) ब
    क) क   ड) झेड

३) जागतिक आरोग्य संघटनेचे मुख्यालय ――― या ठिकाणी आहे.
    अ) लंडन   ब) रोम
    क) जिनेव्हा   ड) कतार

४) ――― याला वैयक्तिक स्वच्छता म्हणता येईल.
    अ) आघोळ करणे   ब) नखे काढणे
    क) स्वच्छ कपडे घालणे   ड) वरील सर्व

प्र.२ खालील प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही तीन)   ०६
१) तंदुरूस्ती ची व्याख्या लिहा.
२) वैयक्तिक स्वच्छता म्हणजे काय?
३) प्रौढ व्यक्तिंनी दिवसभरात किती लिटर पाणी पिणे आवश्यक आहे.
४) सामाजीक आरोग्याचे घटक लिहा.

प्र.३ सविस्तर उत्तरे लिहा. (कोणताही एक)   ०५
अ) शारीरिक तंदुरूस्ती चे घटक लिहा आणि उदहरणासह स्पष्ट करा.
किंवा
ब) जागतिक आरोग्य संघटनेचे सविस्तर कार्य लिहा.

Seat No.		Set	P

B. Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April – 2025
Co-Curricular Course
Health, Wellness and Fitness (CC-205)

Day & Date: Wednesday, 21-05-2025   Max. Marks: 15
Time: 09:00 AM To 10:30 AM

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

Q.1 Choose the correct alternative.   **04**
1)   NIH is an organization that works in the field of _____.
   a) Health   b) Sports
   c) Business   d) None of these

2)   _____ is not type of vitamin.
   a) A   b) B
   c) C   d) Z

3)   The headquarter of the World Health Organization is located in _____.
   a) London   b) Rome
   c) Geneva   d) Qatar

4)   _____ can be called as personal hygiene.
   a) Washing hands   b) Cutting nails
   c) Wearing clean clothes   d) All of the above

Q.2 Write short answers. (Any Three)   **06**
   a) Write the definition of fitness?
   b) What is the personal hygiene?
   c) How many liters of water an adult should drink per day?
   d) Write the factors of social health.

Q.3 Write the detail answer (Any One)   **05**
   a) Write the components of physical fitness and explain them with examples.
   b) Write the detailed work of the World Health Organization.

Seat No.

Set P

B.Sc. (सत्र – II) (नवीन) (NEP CBCS) परीक्षाः मार्च/एप्रिल – २०२५
Co-Curricular Course
Yoga Edu. / Performing Arts (CC-206)

वार, दिनांक : बुधवार, २१-०५-२०२५　　　　　　　　　　　　　कमाल गुण: १५

वेळ: सकाळी ०९:०० ते १०:३०

सूचना : १) सर्व प्रश्न अनिवार्य आहेत.

२) उजवीकडील अंक पूर्ण गुण दर्शवितात.

प्र.१　योग्य पर्याय लिहा.　　　　　　　　　　　　　　　　　०४

१) योग या शब्दाचा अर्थ काय आहे?

अ) व्यायाम　　　　　　　ब) जोडणे किंवा एकत्र आणणे

क) ध्यान　　　　　　　　ड) विश्रांती

२) योगाच्या अभ्यासासाठी (आसने करणे करिता) योग्य वेळ कोणती आहे?

अ) दुपार　　　　　　　　ब) सकाळी

क) संध्याकाळ　　　　　　ड) रात्री

३) योग दिवस कोणत्या दिवशी साजरा केला जातो?

अ) २१ जून　　　　　　　ब) २२ जून

क) २५ जून　　　　　　　ड) २८ जून

४) अनुलोम विलोम हा प्राणायमाचा प्रकार करताना श्वास कशा पद्धतीने घ्यावा?

अ) एका नाकपुडीतून श्वास घेऊन दुसऱ्यातून सोडवा

ब) दोन्ही नाकपुडीतून श्वास घेणे आणि सोडणे

क) तोंडाने श्वास घेणे

ड) श्वास रोखून ठेवणे

**प्र.२　खालील प्रश्नांची थोडक्यात उत्तरे लिहा/एका वाक्यात उत्तरे लिहा.　०६
(कोणतेही तीन)**

१) आसने कोणकोणत्या प्रकारे करता येतात?

२) योगाचे कोणतेही तीन उद्दिष्टे लिहा.

३) प्राणायमामध्ये श्वास घेणे, श्वास रोखणे आणि श्वास सोडणे या प्रक्रियांची नावे काय आहेत?

४) मानवी जीवनामध्ये योगाची गरज काय आहे?

प्र.३ सविस्तर उत्तरे लिहा. (कोणताही एक)   ०५
   अ) योगाचे महत्त्व स्पष्ट करा.

                                किंवा

   ब) प्राणायमाचे महत्त्व स्पष्ट करा.

Seat No.	

B.Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April – 2025
Co-Curricular Course
Yoga Edu. / Performing Arts (CC-206)

Day & Date: Wednesday, 21-May-2025   Max. Marks: 15
Time: 09:00 AM To 10:30 PM

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

Q.1 Choose the correct alternative.   **04**
  1) What is the meaning of Yoga word?
     a) Exercise   b) Join & bring together
     c) Meditation   d) Rest

  2) What is the right time to do Yoga?
     a) Afternoon session   b) Early morning
     c) Evening session   d) Night session

  3) When is Yoga day celebrated?
     a) 21 June   b) 22 June
     c) 25 June   d) 28 June

  4) How should one breathe while performing Anulom Vilom Pranayam?
     a) Inhale through one nostril and exhale through the other
     b) Inhale and exhale through both nostrils
     c) Breathe through the month
     d) Hold your breath

Q.2 Write short answers/Write answer in one sentence. (Any Three)   **06**
  1) In what ways can asanas be performed?
  2) Write any three objectives of yoga.
  3) What are the names of the processes of inhalation. holding the breath and exhalation in pranayama?
  4) What is the need of yoga in human life?

Q.3 Write the detail answer (Any One)   **05**
  1) Explain the importance yoga.
  2) Explain the importance of pranayama.

Seat No.		Set	P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Physics-II (G04-0201)
Electricity, Magnetism and Basic Electronics (G04-0201)

Day & Date: Thursday, 22-May-2025　　　　　　　　　Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1　Choose correct alternative from the following　　　　　　06
　　　1)　Varying current in RC circuit is the type of _____
　　　　　a)　alternating current　　　　b)　direct current
　　　　　c)　pulsating current　　　　　d)　induced current

　　　2)　In parallel resonance circuit, at resonance the impedance is _____
　　　　　a)　Maximum　　　　　　　　b)　Zero
　　　　　c)　Minimum　　　　　　　　d)　Infinite

　　　3)　The figure of merit of ballistic galvanometer has unit _____
　　　　　a)　mm/μA　　　　　　　　b)　mm/μV
　　　　　c)　μA/mm　　　　　　　　d)　μA.mm

　　　4)　In bridge rectifier how many diodes are used?
　　　　　a)　One　　　　　　　　　　b)　Two
　　　　　c)　Three　　　　　　　　　d)　Four

　　　5)　In _____ Circuit removes positive half cycle from output voltage.
　　　　　a)　positive clamper　　　　　b)　negative clamper
　　　　　c)　positive clipper　　　　　d)　negative clipper

　　　6)　Transistor works at _____ biasing.
　　　　　a)　forward-forward　　　　　b)　forward-reverse
　　　　　c)　reverse-forward　　　　　d)　reverse-reverse

Q.2　Answer the following (Any Three)　　　　　　　06
　　　a)　Define AC and DC currents
　　　b)　What is impedance? State its unit.
　　　c)　Define current sensitivity of a ballistic galvanometer with its unit.
　　　d)　What is the transistor? And write its types.
　　　e)　Define clamper.

Q.3 **Answer the following (Any Two)** 06
  a) Write a note on common emitter transistor amplifier.
  b) Write a note on ballistic galvanometer.
  c) Draw the neat circuit diagram of series resonance circuit and write the condition its resonance frequency

Q.4 **Answer the following (Any Two)** 06
  a) Write a short note on power factor of AC circuits
  b) Explain in short the constant of ballistic galvanometer
  c) In common emitter amplifier $I_b = 20 \ \mu A$. Find I_E if $\beta = 100$.

Q.5 **Answer the following (any One)** 06
  a) Describe construction and working of bridge rectifier with $\prod$- filter
  b) Derive an expression for growth of current through LR circuit. What do you mean by time constant of the circuit?

Seat No.		Set	P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Chemistry - II
Organic and Analytical Chemistry (G04-0202)

Day & Date: Friday, 23-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 Choose the correct alternatives from the options.   **06**
1) Curved arrow is used to show _____.
a) resonance
b) inductive effect
c) movement of electrons
d) heat transfer

2) _____ effect involves only 6 electron.
a) Mesomeric
b) Inductive
c) Hyperconjugation
d) None

3) As & character increases electronegativity _____.
a) decreases
b) remains same
c) increases
d) no effect on eletronegativity

4) _____ are non-super imposable mirror images of each other.
a) Diastereoisomer
b) Enantiomers
c) Geometrical isomers
d) None of these

5) The electrostatic force of attraction between appositively charged ions is known as _____ bond.
a) an ionic
b) covalent
c) co-ordinate
d) metallic

6) In kjeldani's method for estimation of nitrogen _____ act as catalyst.
a) Pt
b) K_2SO_4
c) $AgNO_3$
d) C_uSO_4

Q.2 Answer of the following. (Any Three)   **06**
a) Name the types of reagents with example.
b) Define carbene & carbon free radicals.
c) Define hybridisation & give its example.
d) State Fajan's rule.
e) How filtrate is prepared for detection of elements.

Q.3 **Write short answers. (Any Two)** **06**
  a) Explain hybridisaton in methane.
  b) Explain in brief chiral centre.
  c) Define & write equation of specific & molecular viscosities. Explain the terms involved in it.

Q.4 **Answer of the following (Any Two)** **06**
  a) What is elimination reaction. Explain 1, 2 elimination with reaction.
  b) Discuss in short racemic modification.
  c) Explain in brief crystal structure & solubility product of ionic solid.

Q.5 **Answer of the following (Any One)** **06**
  a) How will you estimate C & H by Liebig's combustion method.
  b) How will you determine viscosity of liquid experimentally.

Seat No.		**Set**	**P**

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Mathematics - II
Geometry and Differential Equation (G04-0210)

Day & Date: Saturday, 24-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 **Choose the correct alternatives from the options.**   **06**

1) A general second degree equation represent Parabola if and only if.
   a) $\Delta \neq 0, h^2 - ab = 0$ b) $\Delta \neq 0, h^2 - ab > 0$
   c) $\Delta \neq 0, h^2 - ab < 0$ d) $\Delta = 0, h^2 - ab = 0$

2) Direction cosine of a line whose direction ratio are 2, 1, 2 given by _____.
   a) $\dfrac{12}{13} \ \dfrac{13}{13} \ \dfrac{4}{13}$ b) $3/_2, \dfrac{3}{1}, 3/_2$
   c) $3/_7, 2/_7, 6/_7$ d) $\dfrac{2}{3}, \dfrac{1}{3}, \dfrac{2}{3}$

3) The angle between the planes $2x - y + z = 6$ and $x + y + 2z = 7$ is ____.
   a) $\pi/_3$ b) $\pi/_4$
   c) $\pi/_2$ d) $\pi/_6$

4) The value of $\dfrac{1}{D^2} X^3$ is _____.
   a) $\dfrac{X^5}{20}$ b) $\dfrac{X^5}{5}$
   c) $\dfrac{X^5}{4}$ d) $\dfrac{x^4}{20}$

5) The necessary and sufficient condition for $Mdx + Ndy = 0$ to be exact is _____.
   a) $\dfrac{\partial M}{\partial x} = \dfrac{\partial N}{\partial y}$ b) $\dfrac{\partial M}{\partial y} = \dfrac{\partial N}{\partial x}$
   c) $\dfrac{\partial N}{\partial x} = \dfrac{\partial M}{\partial x}$ d) $\dfrac{\partial M}{\partial y} = \dfrac{\partial N}{\partial y}$

6) Solution of $(D^2 - 1)y = 0$ is $y =$ _____.
   a) $(c_1 + c_2 x)e^x$ b) $(c_1 + c_2 x)e^{-x}$
   c) $c_1 e^x + c_2 e^{-x}$ d) none of these

Q.2 Answer of the following. (Any Three) **06**
- **a)** Write the transformation formula when the axes are rotated about the origin through angel.
- **b)** Show that the three point $(2,5,-4)$ $(1,4,-3)$ $(4,7,-6)$ are collinear.
- **c)** Show that the plane $x + 2y - 3z = 4$ is perpendicular to plane $2x + 5y + 4z = 1$
- **d)** Solve $(D^3 - 3D^2 + 3D - 1) = 0$
- **e)** Is the following equation is extract differential equation.
  $(x^4 - 2xy^2 + y^4)dx - (2x^2y - 4xy^3 + \sin y)dy = 0$

Q.3 Answer of the following. (Any Two) **06**
- **a)** Transform the equation $2x^2 + y^2 - 4x + 4y = 0$ to parallel axes through point $(-2,3)$
- **b)** Solve $(D^2 - 5D + 6)y = 2e^{3x}$
- **c)** Find the equation of plane passing through three points (1, 1, 1) (1, -1, 1) (-7, -3, -5)

Q.4 Answer of the following (Any Two) **06**
- **a)** Show that $(D - \alpha)(D - \beta)\, y = (D - \beta)(D - \alpha)y$ where $D = \frac{d}{dx}$
- **b)** By rotation of axes through an angle θ the expression $ax + by$ becomes $a'x' + b'y'$ then prove that $a^2 + b^2$ is invariant.
- **c)** Evaluate $x\frac{dy}{dx} + 2y = x^3y^2$

Q.5 Answer of the following (Any One) **06**
- **a)** Write the new form of equation $x^2 - y^2 = a^2$ when axes are rotated through an angle $\theta = 30°$
- **b)** Explain the method of solving $\frac{dy}{dx} + PY = Q$ where P and Q are function of x only.

Seat No.

Set P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Microbiology-II
Applied Microbiology (G04-0206)

Day & Date: Saturday, 24-May-2025   Max. Marks: 30
Time: 03:00 PM To 04:30 PM

Instructions: 1) All questions are compulsory.
2) Draw neat diagram wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options. 06
1) Droplet nuclei present in air are less than _____ in diameter.
   a) 1 mm   b) 0.1 mm
   c) 0.1 cm   d) 0.01 mm

2) Sedimentation is enhanced by addition of _____ at treatment plant.
   a) Aluminium sulphate   b) Ammonium Sulphate
   c) Chlorine   d) Ammonium Citrate

3) In SPC the colonies count is measured in _____ unit.
   a) CFU/100ml   b) CFU/ml
   c) PFU/ml   d) PFU/100ml

4) Phosphatase test is used to check the efficiency of _____.
   a) Sterilization   b) Radiation
   c) Pasteurization   d) Sanitation

5) _____ is not a type of disease.
   a) Epidemic   b) Sporadic
   c) Endemic   d) Inoculation

6) _____ is the source of contamination in milk.
   a) Milkman   b) Animal Itself
   c) Water   d) All of the above

Q.2 Answer of the following. (Any Three) 06
   a) Define Aerosol?
   b) Enlist Sources of Contamination of Water?
   c) Define Sewage?
   d) Define Cross infection?
   e) Define Disease?

Q.3   Answer the following (Any Two)   06
    a) Write a note on MBRT?
    b) Explain in short indicators of Fecal pollution of water?
    c) Write in short mode of transmission of disease through physical contact?

Q.4   Answer the following (Any Two)   06
    a) Write in short composition of milk?
    b) Write a note on MPN test?
    c) Write in short Liquid impingement Method?

Q.5   Answer the following (Any One)   06
    a) Describe in detail about Municipal Water Purification Process?
    b) Describe in detail about Prevention and Control of Microbial Diseases?

Seat No.		Set	P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Statistics - II
Elementary Statistics (G04-0211)

Day & Date: Monday, 26-May-2025 Max. Marks: 30
Time: 12:00 PM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of Calculator is allowed.

Q.1 Choose the correct alternative. 06

1) A coin is tossed three times in succession and the outcomes are noted. The number of sample points in the sample space is _____
a) 6   b) 8
c) 3   d) 9

2) Probability of drawing a king card from a pack of 52 cards is _____
a) $\dfrac{1}{52}$ b) $\dfrac{1}{13}$
c) $\dfrac{3}{26}$ d) $\dfrac{3}{52}$

3) If $B \subset A$ then $P(B/A)$ is _____
a) Zero   b) One
c) $\dfrac{P(A)}{P(B)}$ d) $\dfrac{P(B)}{P(A)}$

4) If A and B are independent events with $P(A) = 0.4$ and $P(B) = 0.5$, then $P(A \cup B)$ is equal to _____
a) 0.65   b) 0.70
c) 0.1   d) 0.25

5) Correlation coefficient is independent of change of _____
a) Origin   b) Scale
c) both origin and scale   d) None of these

6) If the regression line of Y on X and that of X on Y are perpendicular to each other, then the value of correlation coefficient is given by _____
a) 0   b) -1
c) $+1$ d) 0.5

Q.2 **Answer the following. (Any Three)** **06**
  a) Define sample space with suitable example.
  b) Define classical definition of probability.
  c) Define conditional probability of A given B.
  d) Define positive correlation with one example.
  e) Define regression coefficient.

Q.3 **Answer the following. (Any Two)** **06**
  a) A fair die is thrown. Write down sample space and the following events
   i) an even number
   ii) a perfect square
  b) With usual notation prove that
   i) $P(\phi) = 0$
   ii) $P(\bar{A}) = 1 - P(A)$
  c) What is the effect of change of origin and scale on covariance?

Q.4 **Answer the following. (Any Two)** **06**
  a) For any two events A and B prove that
   $$P(A/\bar{B}) = \frac{P(A) - P(A \cap B)}{1 - P(B)} \quad \text{if } P(B) \neq 1$$
   Hence deduce that $P(A \cap B) \geq P(A) + P(B) - 1$
  b) If A and B are independent then
   i) A and $\bar{B}$ are independent
   ii) $\bar{A}$ and B are independent
  c) Given that the means of X and Y are 65 and 67, their standard deviations 2.5 and 3.5 respectively and the coefficient of correlation between them is 0.8. Find the equations of two lines of regression

Q.5 **Answer the following. (Any One)** **06**
  a) For any two events A and B prove that
   $P(A \cap B) \leq P(A) \leq P(A \cup B) \leq P(A) + P(B)$
  b) With usual notation, prove that
   $$R = 1 - \frac{6 \sum d_i^2}{n^3 - n}$$

Seat No.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Botany - II
Plant Ecology and Taxonomy of Angiosperm (G04- 0203)

Day & Date: Monday, 26-May-2025   Max. Marks: 30
Time: 03:00 PM To 04:30 PM

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

Q.1   Choose the correct alternatives from the options.   06
      1) The term plant ecology is coined from _____word.
         a) Greek   b)   Roman
         c) Latin   d)   all of these

      2) Cassia auriculata belongs to the family ____.
         a) Caesalpiniaceae   b)   Solanaceae
         c) Nyctaginaceae   d)   Amaryllidaceae

      3) ____ stage is the first stage of Xerosere.
         a) Herb   b)   Moss
         c) Crustose lichen   d)   Foliose lichen

      4) The vegetative character includes ____.
         a) Stem   b)   Calyx
         c) Corolla   d)   Androecium

      5) The plant grow in drought condition is known as ____.
         a) Hydrophytes   b)   Xerophytes
         c) Epiphytes   d)   Mesophytes

      6) The Royal Botanical Garden is at ____.
         a) Kew, Japan   b)   Kew, England
         c) Kew, China   d)   Kew, India

Q.2   Short Notes: (Any Three)   06
      1) Define apocarpous ovary
      2) Write any two distinguishing characters of family Amaryllidaceae
      3) Define the xerophyte.
      4) Define secondary succession
      5) Define hydrosere.

Q.3   Answer the following: (Any Two)   06
      1) Write the morphological adaptation of xerophytic plant.
      2) Describe the advance character of flower.
      3) Explain the principles of taxonomy

Q.4 Answer the following: (Any Two) 06
1) Explain any two climatic factors.
2) Describe stages of xerosere
3) State the principles of ICBN

Q.5 Answer the following: (Any One) 06
1) Give the merits and demerits of Bentham and Hooker's System of classification.
2) Give the distinguishing characters with economic importance of family Nyctaginaceae.

Seat No.

Set **P**

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Zoology-II
Animal diversity-II Chordates (G04-0204)

Day & Date: Tuesday, 27-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 Choose correct alternative.   **06**
1) Herdmania is a _____.
a) Protochordate   b) Invertebrate
c) Chordate   d) Nonchordate

2) Agnatha means absence of _____.
a) Bones   b) Jaws
c) Tail   d) Scales

3) Anura, Apoda and Urodela are orders of class _____.
a) Reptilia   b) Mammal
c) Aves   d) Amphibia

4) Cobra is a _____ snake.
a) Nonpoisonous   b) Poisonous
c) Semipoisonous   d) Non venomous

5) Kingfisher, Pigeon, Eagle and Parrot belongs to class _____.
a) Amphibia   b) Reptiles
c) Aves   d) Pisces

6) Bats are mammals belonging to the order _____.
a) Insectivora   b) Chiroptera
c) Rodentia   d) Proboscide

Q.2 Answer the following. (Any three)   **06**
a) Draw a neat label diagram of Herdmania.
b) Give an examples of Amphibian animal.
c) Give symptoms of poisonous snake bite.
d) Write functions of bird wing and Feathers.
e) Define adaptive radiation.

Q.3 Answer the following. (Any two) 06
    a) Describe general characters of cartilaginous fishes.
    b) Give an account on parental care in Amphibia.
    c) Describe general features of Mammals.

Q.4 Answer the following. (Any two) 06
    a) Give the classification of Petromyzon and Myxine.
    b) Describe poisonous apparatus of snake.
    c) Describe the general feature of order Passeriformes.

Q.5 Answer the following. (Any one) 06
    a) Explain difference between Chondrichthyes and Osteichthyes.
    b) Describe flight adaptations in birds.

Seat No.	

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Environmental Science-II
Environmental Physics and Chemistry (G04-0212)

Day & Date: Tuesday, 27-May-2025　　　　　　　　　　Max. Marks: 30
Time: 03:00 PM To 04:30 PM

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

Q.1　Choose the Correct Alternative.　　　　　　　　　　　　　　06

1)　Which layer of the atmosphere contains the ozone layer, which protects us from harmful UV radiation?
　　a)　Troposphere　　　　　　b)　Stratosphere
　　c)　Mesosphere　　　　　　d)　Thermosphere

2)　Which of the following is an example of an inorganic component of soil?
　　a)　Humus　　　　　　　　b)　Dead leaves
　　c)　Rock fragments　　　　d)　Plant roots

3)　Pressure is defined as: _____.
　　a)　Force divided by area　　b)　Area divided by force
　　c)　Force multiplied by area　d)　Energy divided by area

4)　Which of the following is an example of a strong acid?
　　a)　Acetic acid　　　　　　b)　Hydrochloric acid
　　c)　Carbonic acid　　　　　d)　Citric acid

5)　Which of the following is NOT a form of electromagnetic radiation?
　　a)　Visible light　　　　　　b)　Radio waves
　　c)　Sound waves　　　　　d)　X-rays

6)　Which of the following pH values indicates a neutral solution?
　　a)　2　　　　　　　　　　b)　7
　　c)　10　　　　　　　　　d)　14

Q.2　Answer the following. (Any Three)　　　　　　　　　　　　06

1)　Define conduction of heat.
2)　Explain term pressure.
3)　Write note on concepts of pH.
4)　What is transmission of light.
5)　Define acidity of water.

Q.3   Answer the following question. (Any Two)   06
    1)   Difference between solutes and solvents.
    2)   Write a note on concept spectroscopy.
    3)   Explain concept of temperature.

Q.4   Answer the following. (Any Two)   06
    1)   Write Importance of nitrogen in soil.
    2)   Explain photochemical reactions in atmosphere.
    3)   Write Chemical and physical properties of water.

Q.5   Answer the following (Any one).   06
    1)   Write inorganic and organic components in soil.
    2)   Explain concept Beer-Lambert law.

Seat No.	

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Geology - II
Mineralogy (G04-0209)

Day & Date: Wednesday, 28-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

Instructions: 1) All questions are compulsory.
                2) Draw neat diagram whenever necessary.
                3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options given below.   **06**
  1) Which of the following mineral shows twinkling property?
     a) Andalusite   b) Calcite
     c) Phlogopite   d) none of these

  2) Lower nicol prism is called as _____.
     a) polarizer   b) analyzer
     c) condenser   d) pillar

  3) Feldspar shows_____ sets of cleavages.
     a) I   b) II
     c) III   d) None

  4) _____ mineral belongs to the mica group.
     a) Orthoclase   b) Plagioclase
     c) Biotite   d) All of these

  5) Cleavages in calcite is _____ set.
     a) 1   b) 3
     c) 2   d) 8

  6) Diamond mineral having _____ hardness.
     a) 10   b) 7
     c) 5   d) 6

Q.2 Write short answers. (Any Three)   **06**
  a) Name feldspar group of minerals.
  b) Give the physical properties of calcite mineral.
  c) Name the parts of upper Nicol prism of polarizing microscope?
  d) Define streak of mineral? How can it determine.
  e) Define mineral.

Q.3 **Answer of the following. (Any Two)**   **06**
   1)   What is Hardness and Mohs' scale of hardness
   2)   Describe physical and optical properties of hornblende and augite.
   3)   Explain relief of minerals.

Q.4 **Answer the following. (Any Two)**   **06**
   1)   Describe the form of mineral in physical properties of minerals.
   2)   Describe is pleochroism of minerals.
   3)   Describe isotropism and Anisotropism in minerals

Q.5 **Answer the following. (Any One)**   **06**
   1)   Describe luster, cleavage and Hardness of minerals.
   2)   Describe optical properties form, twinkling and extension of minerals.

Seat No.		Set	P

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Computer Science - II
Operating System Fundamentals (G04-0208)

Day & Date: Wednesday, 28-May-2025   Max. Marks: 30
Time: 03:00 PM To 04:30 PM

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

Q.1   Choose the correct alternatives from the options given below.   06

1)   The operating system where fixed time slot is allocated to each active process is _____.
   a)   real time O.S   b)   multiprogramming O.S
   c)   batch O.S   d)   time-sharing O.S

2)   Interval between the time of submission and completion of the job is called _____.
   a)   Waiting time   b)   turn-around time
   c)   Throughput   d)   response time

3)   A program in execution is called _____.
   a)   Process   b)   Instruction
   c)   Procedure   d)   Function

4)   Virtual memory can be implemented with _____.
   a)   Segmentation   b)   Paging
   c)   Both A and B   d)   None of the above

5)   _____ is a technique of temporarily removing inactive programs from the Memory of computer system.
   a)   Swapping   b)   Spooling
   c)   Semaphore   d)   Scheduler

6)   There is a guarantee that the critical tasks are completed in given amount of time. That is called as _____.
   a)   Hard Real time systems   b)   soft real time system
   c)   Real time systems   d)   None of the above

Q.2 Write short answers. (Any Three) 06
   a) What is mean by Operating System?
   b) Define the term Semaphores?
   c) What is paging?
   d) What is Threads in Operating System?
   e) What are deadlocks?

Q.3 Answer the following. (Any Two) 06
   a) Explain different Services Provided by Operating System.
   b) Explain Process Concept with Process states.
   c) Explain different Characteristics of Deadlock?

Q.4 Answer the following. (Any Two) 06
   a) Explain FCFS scheduling algorithm with Example?
   b) Explain Swapping with block diagram?
   c) Explain Dinning Philosopher Problem.

Q.5 Answer the following. (Any One) 06
   a) What is page replacement? Explain FIFO page replacement algorithm?
   b) Explain Time Sharing and Real-Time operating System.

Seat No.

**B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination:
March/April - 2025
Geography- II
Geomorphology- II (G040207)**

Day & Date: Thursday, 29-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 Choose the correct alternatives from the options.   06
  1) The process of disintegration and decomposition of Rock is Situ called
      _____.
      a) Weathering   b) Deposition
      c) Mass Movement   d) Erosion

  2) The world Delta derived from _____ language.
      a) Latin   b) Greek
      c) Spanish   d) English

  3) _____ types of rock are formed from the cooling and solidification of
      Magma and Lava.
      a) Sedimentary   b) Metamorphic
      c) Igenous   d) Foliated

  4) Cycle of erosion concept first postulated by geologist _____.
      a) Ratzel   b) Humboldt
      c) Hutton   d) Davis

  5) Bays and head land is formed due to the _____ action of coastal.
      a) Erosional   b) Depositional
      c) Transportation   d) weathering

  6) _____% world land surface occupied by Glacier.
      a) 5   b) 10
      c) 15   d) 20

Q.2 Answer of the following. (Any Three)   06
  a) Characteristics of sedimentary rocks.
  b) Define mass wasting.
  c) Write the name of erosional landforms made by Glacier.
  d) Define Sea Arch and Natural Bridge.
  e) Write the agent of physical weathering.

Q.3 Write short answers. (Any Two)   **06**
- **a)** Write the causes of mass wasting.
- **b)** Explain the first stage of the cycle of erosion.
- **c)** Delta region.

Q.4 Answer of the following (Any Two)   **06**
- **a)** Explain the types of biological weathering.
- **b)** Describe Mushroom Rock.
- **c)** 'V' Shaped Valley.

Q.5 Answer of the following (Any One)   **06**
- **a)** Describe the Depositional landforms made by Aeolian.
- **b)** Define Weathering and explain the types of chemical weathering.

B.Sc. (Plain) (Semester - II) (New) (NEP CBCS) Examination: March/April - 2025
Electronics-II
Basic Circuit Theory and Network Analysis (G04-0205)

Day & Date: Friday, 30-May-2025   Max. Marks: 30
Time: 12:00 PM To 01:30 PM

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

Q.1 **Choose the correct alternatives from the options given below.**　　**06**
　　1) _____ is used as an electromechanical switch.
　　　　a)　Capacitor　　　　　　　　b)　Relay
　　　　c)　Fuse　　　　　　　　　　d)　Transformer

　　2) A sinusoidal AC current has an RMS value of 50 amps; its maximum value is _____.
　　　　a)　78.61 amps　　　　　　　b)　70.72 amps
　　　　c)　25 amps　　　　　　　　d)　100 amps

　　3) If the colour bands on a resistor are Grey, Red, Red and Golden respectively. The resistor value will be _____.
　　　　a)　$82K\Omega, \pm5\%$　　　　　　b)　$820K\Omega, \pm10\%$
　　　　c)　$82K\Omega, \pm20\%$　　　　　d)　$8.2K\Omega, \pm5\%$

　　4) Series resonance circuit is also called a _____ circuit.
　　　　a)　rejecter　　　　　　　　　b)　current magnifier
　　　　c)　voltage magnifier　　　　　d)　none of these

　　5) The Z parameters are called _____ parameters.
　　　　a)　Admittance　　　　　　　b)　ABCD
　　　　c)　Hybrid　　　　　　　　　d)　Impedance

　　6) The hybrid parameter h11 is called _____.
　　　　a)　output conductance　　　　b)　reverse voltage gain
　　　　c)　input impedance　　　　　d)　forward current gain

Q.2 **Answer the following. (Any Three)**　　**06**
　　a) Define RMS Voltage.
　　b) What is Inductor? State its unit.
　　c) State Norton's Theorem.
　　d) Draw the equivalent electrical diagram of an ideal and practical voltage source.
　　e) Draw V-I characteristics of an ideal current source.

Q.3 Answer the following. (Any Two) 06
   a) Compare series and parallel resonance circuit.
   b) What is the impedance of an RL Series Circuit?
   c) State and Explain Kirchhoff's Voltage Law.

Q.4 Answer of the following. (Any Two) 06
   a) Determine the resonant frequency and bandwidth of a series RLC circuit, where $R = 10\Omega, C = 10 \ \mu F \ and \ L = 0.5 \ mH$.
   b) Give the classification of capacitors. Hence write the specifications and applications of any one capacitor.
   c) Explain Maximum Power Transfer Theorem.

Q.5 Answer the following. (Any One) 06
   a) State and prove Thevenin's Theorem.
   b) Write the Z-parameters of a two port network. Hence determine the Z-Parameters for given T- network.
   $(Where; \ V1 = 5V, V2 = 7V, R1 = 5\Omega, R2 = 5\Omega, R3 = 10\Omega)$