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- प्र.२ खालील प्रश्नांची थोडक्यात उत्तरे लिहा. (कोणतेही तीन) 0६
- १) इनव्हिट्रो फर्टिलायझेशनचे कोणतेही दोन महत्त्व लिहा.
  - २) भारतातील कोणतेही दोन राष्ट्रीय जैवतंत्रज्ञान संस्था.
  - ३) ट्रान्सजेनिक गुरे आणि नॉकआउट माईस परिभाषित करा.
  - ४) कॅरी मुलिस कोण आहे आणि शास्त्रज्ञाने दिलेल्या योगदानाचे थोडक्यात वर्णन करा.
  - ५) वर्मी-तंत्रज्ञान आणि त्याचा वापर परिभाषित करा.
- प्र.३ खालील प्रश्नांची उत्तरे लिहा. (कोणतेही दोन) 0६
- अ) उदाहरणासह पॅसिव्ह इम्युनिटीबद्दल थोडक्यात नोंद द्या.
  - ब) ट्रान्सजेनिक माशांचे महत्त्व समजावून सांगा.
  - क) जैवतंत्रज्ञानातील रोबोटिक्सची व्याप्ती लिहा.
- प्र.४ खालील प्रश्नांची उत्तरे लिहा. (कोणतेही दोन) 0६
- अ) मानवी रोग एलिफंटियासिसचे परिणाम आणि प्रतिबंध स्पष्ट करा.
  - ब) उदाहरणासह खाद्य लसींची (edible vaccine) थोडक्यात नोंद.
  - क) रेड बायोटेक्नॉलॉजी वर एक टीप लिहा.
- प्र.५ खालील प्रश्नाचे उत्तर लिहा. (कोणताही एक) 0६
- अ) न्युमोनियाचे परिणाम, प्रतिबंध आणि नियंत्रण यावर एक टीप लिहा.
  - ब) लसीकरण (immunization) आणि लसीकरण (vaccination) बद्दल तपशीलवार व्याख्या करा आणि स्पष्ट करा.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025  
Biotechnology in Human Welfare (G05-GE-OE101)**

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.  
3) Draw neat diagrams and give necessary equations wherever necessary.

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

06

- 1) The Golden Rice variety is rich in a \_\_\_\_\_.
  - a) Vitamin C
  - b) B-carotene and ferritin
  - c) Biotin
  - d) Lysine
- 2) In humans, the babies produced by in vitro fertilization and embryo transfer was popularly called as \_\_\_\_\_.
  - a) in-vitro babies
  - b) test tube babies
  - c) in-vitro-in-vivo babies
  - d) in-vivo babies
- 3) \_\_\_\_\_ is not a genetically modified crop.
  - a) Bt-cotton
  - b) Bt-brinjal
  - c) Golden rice
  - d) Bt-carrot
- 4) The first transgenic plant to be produced is \_\_\_\_\_.
  - a) Brinjal
  - b) Tobacco
  - c) Rice
  - d) Cotton
- 5) The gene which is artificially introduced into the genome of another organism called \_\_\_\_\_.
  - a) transgene
  - b) trans promoter
  - c) trans enhancer
  - d) trans factor
- 6) The primary goal of yellow biotechnology is \_\_\_\_\_.
  - a) to improve crop yields
  - b) to develop new biofuels
  - c) increase the production of edible oil
  - d) to improve human health and quality of life

- Q.2 Answer the following questions. (Any Three) 06**
- a) Write any two importances of Invitro fertilization.
  - b) Any two national institutes of biotechnology in India.
  - c) Define transgenic cattle and knockout mice.
  - d) Who is Kary Mullis and briefly describe the contribution made by the scientist?
  - e) Define Vermi-technology and its use.
- Q.3 Answer the following questions. (Any Two) 06**
- a) Give a brief note about Passive immunity with example.
  - b) Explain transgenic fish along with its importances.
  - c) Write down the scope of Robotics in biotechnology.
- Q.4 Answer the following questions. (Any Two) 06**
- a) Explain the effects and prevention of human disease elephantiasis.
  - b) Brief note on edible vaccines with example.
  - c) Write a note on Red Biotechnology.
- Q.5 Answer the following questions. (Any One) 06**
- a) Write a note on effects, prevention and control of Pneumonia.
  - b) Define and explain in detail about Immunization and Vaccination.

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

Day & Date: Friday, 02-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 word /phrase from the given options and complete the sentence. 06**

- 1) Communication is process by which \_\_\_\_\_ is exchanged between individuals through a common system of symbols, signs or behaviour?
  - a) style
  - b) information
  - c) confusion
  - d) silence
- 2) Which type of communication uses body language instead of words?
  - a) verbal communication
  - b) non-verbal communication
  - c) written communication
  - d) visual communication
- 3) \_\_\_\_\_ Formal communication happens in person, such as in meetings, interviews, or presentations.
  - a) telephonic conversation
  - b) face to face
  - c) video conferences
  - d) fax
- 4) \_\_\_\_\_ is a mutual exchange of information between an employer and prospective candidate.
  - a) group discussion
  - b) an interview
  - c) facial expression
  - d) mutuality
- 5) Why is it important to stay on a topic in a group discussion?
  - a) to show respect to the moderator
  - b) to ensure the discussion remains focused
  - c) to impress others with irrelevant facts
  - d) to dominate the conversation
- 6) What should be avoided in a group discussion?
  - a) making eye contact
  - b) interrupting others
  - c) summarizing key points
  - d) giving structured arguments

- Q.2 Answer the following questions. (Any Two) 06**
- a) What is communication? Write significance of communication.
  - b) What are the types of communication based on communication channel communication?
  - c) Write don'ts in an Interview.
  - d) Write dos in Group Discussion
- Q.3 Write Short Notes. (Any One) 06**
- a) Write barriers to effective communication.
- OR**
- b) What are the 7's of the communication?
- Q.4 a) What are the techniques of Group Discussion? 12**
- OR**
- b) How to prepare for the interview?

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April – 2025  
IKS  
Indian Knowledge System/ General IKS (G05-IKS-101)**

Day & Date: Saturday, 03-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 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-centered 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.



- प्र.२ थोडक्यात उत्तरे लिहा. (कोणतेही ३) 0६
- 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) 0६
- १) सुशासनची वैशिष्ट्ये स्पष्ट करा.
  - २) भारतीय राज्यघटनेचा सरनामा लिहा.
  - ३) भारतीय नागरिकांची मूलभूत कर्तव्ये स्पष्ट करा.
- प्र.४ थोडक्यात उत्तरे लिहा. (कोणतेही २) 0६
- 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) 0६
- १) भारतीय राज्यघटनेची वैशिष्ट्ये स्पष्ट करा.
  - २) भारतीय निर्वाचन आयोगाचे अधिकार आणि कार्ये सांगा.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April – 2025  
VES**

## Constitution of India / Indian Constitution and Democracy (ICD-101)

Day & Date: Monday, 05-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 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 Lok Sabha.
  - 2) Explain the power and functions of Rajya Sabha.
  - 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.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025  
Biophysics and Chemical Science (G05-0101)**

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

Max. Marks: 30

**Instructions:** 1) All questions are compulsory.  
2) Draw neat diagrams and give equations whenever necessary.  
3) Figures to right indicate full mark.

**Q.1 A) Multiple choice questions: 06**

- 1) What is the primary focus of biophysics?
  - a) Study of plant physiology
  - b) Examination of animal behavior.
  - c) Investigation of biological processes using physical principles
  - d) Exploration of geological formations in living organisms
- 2) Which among the following has the strongest interaction?
  - a) Vander Waals interactions      b) Ionic bonds
  - c) Hydrogen bond                      d) Covalent bond
- 3) What symbol is used to denote 'molality'?
  - a) M    b) M
  - c) mM                                      d) n
- 4) Which of the following is the formula for pH calculation?
  - a)  $\log_{10}[\text{H}^+]$                           b)  $-\log_{10}[\text{H}^+]$
  - c)  $\log_2[\text{H}^+]$                               d)  $-\log_2[\text{H}^+]$
- 5) First law of thermodynamics deals with \_\_\_\_\_.
  - a) Conservation of mass              b) Conservation of momentum
  - c) Conservation of energy            d) Conservation of pressure
- 6) An increase in enthalpy leads to an increase in \_\_\_\_\_.
  - a) Increase in pressure                b) Increase in volume
  - c) Increase in internal energy        d) Increase in mass

**Q.2 Answer the following. (Any Three) 06**

- a) Define density
- b) Define freezing point.
- c) Define Centrifugal force.
- d) Define molality.
- e) Define entropy.

- Q.3 Write short notes of the following. (Any Two) 06**
- a) Definition and significance of dipole moment.
  - b) Physicochemical properties of water.
  - c)  $sp^3$  hybridization.
- Q.4 Write short notes of the following. (Any Two) 06**
- a) Types of bonds in biomolecules.
  - b) Laws of thermodynamics.
  - c) Dilution factor.
- Q.5 Answer the following. (Any One) 06**
- a) What are solutions? Explain its types with add a note on molarity and normality.
  - b) Explain in detail molecular structure water add a note on hydrophobic interaction.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025  
Biochemistry (G05-0102)**

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

Max. Marks: 30

**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 Multiple choice questions:**

**06**

- 1) What is the composition of nucleotide?
  - a) a sugar + a phosphate
  - b) a base + a sugar
  - c) a base + a phosphate
  - d) a base + a sugar + phosphate
- 2) Which of the following amino acid is sweet in taste?
  - a) Glycine
  - b) Alanine
  - c) Glutamic acid
  - d) None of these
- 3) Enzymes that differ in amino acid sequence but catalyse the same reaction are \_\_\_\_\_.
  - a) Co-factor
  - b) Isoenzyme
  - c) Co-enzyme
  - d) Apo-enzyme
- 4) Which of the following is not a monosaccharide with 5 carbon atoms?
  - a) Arabinose
  - b) Xylulose
  - c) Trehalose
  - d) Ribulose
- 5) What should be the complementary strand of 3'....ATGGCTTGA....5'?
  - a) 3'.... TACCGAACT....5'
  - b) 5'.... TACCGAACT....3'
  - c) 3'.... TAGGCAAGT....5'
  - d) 5'.... TAGGCAAGT....3'
- 6) Which of the following is an example of unsaturated fatty acids?
  - a) Lauric or Dodecanoic
  - b) Linoleic or octadecatrienoic
  - c) Palmitic or hexadecenoic
  - d) Myristic or tetradecanoic

- Q.2 Answer the following. (Any Four) 06**
- a) Define monosaccharide.
  - b) Define Lipids.
  - c) Write a short note on source of Vitamin-C.
  - d) Define glycosidic bond.
  - e) Define fatty acids.
- Q.3 Write short notes. (Any Two) 06**
- a) Describe role of water-soluble vitamins.
  - b) Write a note on induced fit hypothesis.
  - c) Differentiate between DNA and RNA.
- Q.4 Answer the following. (Any Two) 06**
- a) Write a note on Polysaccharide with example.
  - b) Write a note on secondary structure of protein.
  - c) Write a note on classification of lipids.
- Q.5 Answer the following. (Any One) 06**
- a) Define nucleic acid and add note on composition, structure, and nomenclature of nucleotides.
  - b) Define hormone add a note on its classification in details.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025  
Fundamentals of Microbiology (G05-0103)**

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

Max. Marks: 30

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

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

**06**

- 1) \_\_\_\_ is present in the cell wall of Gram positive as well as Gram negative bacteria.
  - a) Teichoic acid
  - b) Peptidoglycan
  - c) Lipopolysaccharides
  - d) Phospholipid
- 2) Arrangement of flagella all over the surface of the cell is called as \_\_\_\_\_.
  - a) Monotrichous
  - b) Lophotrichous
  - c) Amphitrichous
  - d) Peritrichous
- 3) \_\_\_\_ type of ribosome is present in prokaryotic cell.
  - a) 80S
  - b) 60S
  - c) 70S
  - d) 40S
- 4) Antiphagocytic nature is shown by \_\_\_\_\_.
  - a) Cell wall
  - b) Capsule
  - c) Cell membrane
  - d) Flagella
- 5) The grape like arrangement of cocci in bunches is called as \_\_\_\_\_.
  - a) Staphylococci
  - b) Streptococci
  - c) Diplococci
  - d) Tetrad
- 6) Pasteurization was first discovered by \_\_\_\_\_.
  - a) Antony Van Leeuwenhoek
  - b) Louis Pasteur
  - c) Robert Koch
  - d) Winogradsky

**Q.2 Answer the following. (Any Three)**

**06**

- 1) Define biogenesis.
- 2) Define Protozoa and write one example.
- 3) Define Prokaryotic and Eukaryotic cell.
- 4) Give different arrangements of bacilli shaped bacteria.
- 5) Write any two functions of cell wall.

**Q.3 Answer the following. (Any Two) 06**

- 1) Write a note on Flagella along with its function.
- 2) Write general characters of Algae.
- 3) Explain Germ Theory of diseases.

**Q.4 Answer the following. (Any Two) 06**

- 1) Explain cell membrane with well labelled diagram.
- 2) Write a note on morphological arrangement of bacteria.
- 3) Write an account on Koch's postulates.

**Q.5 Answer the following. (Any One) 06**

- 1) Write a detailed account on contribution of Antony Van Leeuwenhoek.
- 2) Give general characters and economic importance of fungi.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025**

**Taxonomy and Classification (G05-0104)**

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

Max. Marks: 30

**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) Three kingdom system of classification was given by \_\_\_\_\_.  
 a) Carolus Linnaeus                      b) Ernst Haeckel  
 c) Herbert Copeland                      d) R.H. Whittaker
- 2) \_\_\_\_\_ are animals without a notochord.  
 a) Chordates                                  b) Cephalochordates  
 c) Tunicate                                    d) Non chordate
- 3) Phylum Platyhelminthes consist of \_\_\_\_\_ Classes.  
 a) 4    b) 5  
 c) 6    d) 9
- 4) \_\_\_\_\_ is called living fossils.  
 a) Algae                                        b) Cycas  
 c) Fungi                                        d) Candida
- 5) \_\_\_\_\_ is ancient group of plants.  
 a) Chlorophyta                                b) Rhodophyte  
 c) Pteridophyte                                d) Pyrrophyte
- 6) \_\_\_\_\_ is not a gram-negative microbe.  
 a) Pseudomonas                                b) Actinomyces  
 c) Aeromonas                                    d) Salmonella

**Q.2 Answer the following. (Any Three)** **06**

- a) Define Taxonomy.
- b) Enlist an examples of phylum Mollusca.
- c) Write any two economic importance of algae.
- d) Define the concept of Domains.
- e) Define Mycology.

- Q.3 Answer the following questions. (Any Two) 06**
- a) Give the distinguishing features and any two examples of Protozoa & Reptilia.
  - b) Write down the difference between Vertebrate & Invertebrate.
  - c) What are the principles of ICBN?
- Q.4 Answer the following questions. (Any Two) 06**
- a) Give the outline classification of Angiosperms by Bentham and Hookers.
  - b) Elaborate the salient morphological features of bacterial taxonomy with two suitable examples.
  - c) Give the outline of Ainsworth classification and importance of fungi.
- Q.5 Answer the following questions. (Any One) 06**
- a) What are chordates? Give their salient features and classification.
  - b) What is plant taxonomy? Explain in detail about the general characters and economical importance of Bryophytes with examples.

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**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025  
Animal Physiology (G05-0105)**

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

Max. Marks: 30

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

**Q.1 Multiple choice questions****06**

- 1) What does our digestive system consist of?
  - a) Alimentary canal and associated glands
  - b) Alimentary canal only
  - c) Digestive glands only
  - d) Mucous glands
- 2) \_\_\_\_\_ is the covering of the heart known as.
  - a) Meninges
  - b) Pleura
  - c) Pericardium
  - d) Peritoneum
- 3) Which of the following produces the male sex hormone?
  - a) Rete testis
  - b) Seminiferous tubule
  - c) Leydig cell
  - d) Scrotum
- 4) Which of the following is not an endocrine gland?
  - a) Pituitary gland
  - b) Sebaceous gland
  - c) Pineal gland
  - d) Adrenal gland
- 5) One hemoglobin carries \_\_\_\_\_ molecules of oxygen.
  - a) 6
  - b) 3
  - c) 4
  - d) 2
- 6) How many nephrons are present in each kidney?
  - a) One million
  - b) One billion
  - c) One trillion
  - d) Two million

- Q.2 Answer the following questions. (Any Three) 06**
- a) Draw diagram of Pituitary gland.
  - b) Define nervous system.
  - c) Give two names of Composition of blood.
  - d) Define Cardiac output.
  - e) Write a short note on intestinal juice.
- Q.3 Write short notes on the following. (Any Two) 06**
- a) Mechanism of coagulation of blood.
  - b) Hormonal regulation in male reproductive system
  - c) Structure and function of nerve cell.
- Q.4 Write short notes on the following. (Any Two) 06**
- a) Exchange of gases
  - b) Malphigian body
  - c) Chloride shift
- Q.5 Answer the following questions. (Any One) 06**
- a) What is digestive system? Explain in detail mechanism of digestion.
  - b) Explain in details the structure of kidney with urine formation.

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Set **P**

**B.Sc. (Biotechnology) (Semester - I) (New) (NEP CBCS) Examination:  
March/April - 2025  
Plant Physiology (G05-0106)**

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

Max. Marks: 30

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

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

- 1) Macromolecule Chitin is a \_\_\_\_\_.
  - a) polysaccharide
  - b) protein
  - c) lipid
  - d) vitamin
- 2) \_\_\_\_\_ is the most abundant protein in animal world.
  - a) Trypsin
  - b) Collagen
  - c) Haemoglobin
  - d) Insulin
- 3) In rainy season, doors get swelled up due to \_\_\_\_\_.
  - a) Diffusion
  - b) Transpiration
  - c) Imbibition
  - d) Respiration
- 4) Which of the following enzyme helps in fixing CO<sub>2</sub> into malic acid in sorghum plant?
  - a) RuBP carboxylase
  - b) PEP carboxylase
  - c) Pentose phosphatase
  - d) Cytokinin
- 5) The mode of nutrition in which organisms make food themselves from simple substances is called \_\_\_\_\_.
  - a) heterotrophic nutrition
  - b) autotrophic nutrition
  - c) saprophytic nutrition
  - d) phototrophic nutrition
- 6) Peroxisomes are involved in which type of reactions pertaining to plant photosynthesis?
  - a) Calvin cycle
  - b) Glycolytic cycle
  - c) Glyoxylate cycle
  - d) Bacterial photosynthesis

- Q.2 Answer the following questions. (Any Three) 06**
- a) Define growth curve and name the different phases of growth curve.
  - b) What is a simple plant tissue? Give example of it.
  - c) Define transpiration.
  - d) Differentiate between photosystems I and II.
  - e) Name any two plant hormones.
- Q.3 Answer the following questions. (Any Two) 06**
- a) Explain in detail non-cyclic photophosphorylation.
  - b) Write note on physiological role and mode of action of auxins.
  - c) Explain in brief Stomata.
- Q.4 Answer the following questions. (Any Two) 06**
- a) Explain in detail structure and function of plant cell.
  - b) Explain CAM pathway.
  - c) Describe nitrogen fixation.
- Q.5 Answer the following questions. (Any One) 06**
- a) Explain in detail shoot and root apical meristem and its histological organization.
  - b) Write in detail information about plant water relation.

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**B.Sc. (Biotechnology) (Semester - II) (New) (NEP CBCS) Examination:  
March/April - 2025**

**Basic Computer Science (G05-GE-OE-201)**

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

Max. Marks: 30

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

**Q.1 Choose correct alternative. (MCQ)**

**06**

- 1) IP stands for \_\_\_\_\_.
 

a) Internet Privacy	b) Internet Protocol
c) Internet Property	d) Intellectual Protocol
- 2) \_\_\_\_\_ is generally referred to as main memory of the computer system.
 

a) ROM	b) ALU
c) RAM	d) CMOS
- 3) The word Computer is derived from a \_\_\_\_\_ word.
 

a) Latin	b) Greek
c) Roman	d) African
- 4) \_\_\_\_\_ is a series of operating systems that are designed by Microsoft.
 

a) Linux	b) Windows
c) Unix	d) Mac OS
- 5) \_\_\_\_\_ means connecting computer to any other computer anywhere in the world.
 

a) Internet	b) Program
c) Hardware	d) File
- 6) WWW stands for \_\_\_\_\_.
 

a) World Wide Wizard	b) World Wide Wave
c) World Wide Web	d) World Wide Wonder

**Q.2 Answer the following. (Any Three)**

**06**

- a) What is the function of search engine?
- b) Write examples of input and output devices of system.
- c) Define hardware and write example of it.
- d) What is meant by Database?
- e) Write a short note on Antivirus and examples.

- Q.3 Answer the following Question. (Any Two) 06**
- a) Write and explain threats to Computer.
  - b) Write brief account on DigiLocker and ABC ID.
  - c) Explain types of memory units with its type and examples.
- Q.4 Answer the following Question. (Any Two) 06**
- a) Write a brief account on basic computer operations.
  - b) Give note on programming languages.
  - c) Describe in detail cybercrime and computer ethics.
- Q.5 Answer the following Question. (Any One) 06**
- a) Write brief account on HTML.
  - b) Describe in detail computer networking with its type.

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**B.Sc. (Biotechnology) (Semester - II) (New) (NEP CBCS) Examination:  
March/April - 2025  
English/ English for communication (ENG-201)**

Day & Date: Saturday, 10-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 difference between listening and hearing?
  - a) hearing is better than listening
  - b) listening does not need attention
  - c) listing is active, hearing is passive
  - d) hearing requires interpretation
- 2) Which tone is used in yes/no questions?
  - a) Rising
  - b) Falling
  - c) Neutral
  - d) Flat
- 3) What is the primary purpose of active listening in the context of interview skills?
  - a) to ask leading questions
  - b) to dominate the conversation
  - c) to provide immediate advice and solution
  - d) to understand, interpret, and respond to the speaker appropriately
- 4) What writing style is typically used in a newspaper report?
  - a) conversational tone
  - b) first-person narrative
  - c) inverted pyramid style
  - d) poetic style
- 5) \_\_\_\_\_ is used when sending copies without revealing the other recipients' email addresses.
  - a) CC
  - b) CB
  - c) BC
  - d) BCC
- 6) What element makes a blog visually appealing?
  - a) long paragraphs
  - b) images and subheadings
  - c) lack of formatting
  - d) dense text blocks

- Q.2 Answer any two out of the following. 06**
- a) Write a note on English tones.
  - b) Write the types of listening.
  - c) Write an email to your university inquiry about online MBA program.
  - d) Write a newspaper report on 'India wins T20 against Australia'.
- Q.3 Answer any one of the following. 06**
- a) What are the common barriers to listening and how can they be overcome?
  - b) Define listening and its importance in communication.
- Q.4 Answer any one of the following. 12**
- a) What is formal letter? Explain its structure with one example.
  - b) What is a blog? What care should be taken whenever writing a blog?

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

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

## 06

- Q.2 Answer the following. (Any three)**

06

- Page 1 of 2

- 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.

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Set **P**

**B.Sc. (Biotechnology) (Semester - II) (New) (NEP CBCS) Examination:  
March/April - 2025  
Developmental Biology (G05-0201)**

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

Max. Marks: 30

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

**Q.1 Multiple choice questions. 06**

- 1) \_\_\_\_\_ part of sperm is attached to Sertoli cells prior to spermiation.
  - a) Tail
  - b) Head
  - c) Trunk
  - d) Body
- 2) During seed germination, embryo develops into \_\_\_\_\_.
  - a) Seedling
  - b) Complete plant
  - c) Flower
  - d) Root
- 3) The haploid ovum is also-called as \_\_\_\_\_.
  - a) Oogonium
  - b) Oocyte
  - c) Ootid
  - d) Osteoid
- 4) Unlimited growth of the plant, is due to the presence of \_\_\_\_\_.
  - a) Meristems
  - b) Tissues
  - c) Apical cells
  - d) Special organs
- 5) \_\_\_\_\_ is not a function of the male sex hormone Testosterone.
  - a) Onset of spermatogenesis
  - b) Maintenance of accessory ducts
  - c) Release of semen
  - d) Maintenance of accessory glands
- 6) The lining of uterus to which the embryo implants is called as \_\_\_\_\_.
  - a) Coccyx
  - b) Trohoblast
  - c) Yolk plug
  - d) Endometrium

**Q.2 Answer any three of the following: 06**

- a) Define Morphogenesis.
- b) Define organogenesis.
- c) Define blastulation.
- d) Draw neat and labelled diagram of flower.
- e) Write the names of three germ layers.

- Q.3 Write short note on any two of the following. 06**
- a) Oogenesis
  - b) Activation of ovum
  - c) Floral development in *Arabidopsis*
- Q.4 Answer any two of the following. 06**
- a) Write a short note on seed formation and germination.
  - b) Differentiation between External and Internal fertilization.
  - c) Write a short note on Spawning and copulation.
- Q.5 Answer any one of the following. 06**
- a) What is fertilization? Describe in details embryo sac development and double fertilization in angiosperms.
  - b) What is gamete? Describe in details structure of egg and sperm with types of eggs.

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**B.Sc. (Biotechnology) (Semester - II) (New) (NEP CBCS) Examination:  
March/April - 2025  
Ecology (G05-0202)**

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

Max. Marks: 30

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

**Q.1 Choose correct alternative and rewrite the following sentence. 06**

- 1) \_\_\_\_\_ is an example of mutualistic relationship.
  - a) Predator-prey Relationship
  - b) Commensalism
  - c) Mycorrhizal Fungi and plant roots
  - d) Parasitism
  
- 2) \_\_\_\_\_ abiotic factor is crucial for photosynthesis in plants.
  - a) Temperature
  - b) Light
  - c) Oxygen
  - d) Soil
  
- 3) In a Freshwater Lotic ecosystem the water is \_\_\_\_\_.
  - a) Still
  - b) Flowing
  - c) Salty
  - d) Static
  
- 4) \_\_\_\_\_ is an example of an interspecific association.
  - a) A lion and zebra
  - b) Birds and bees
  - c) Parental care in fishes
  - d) A parasite and its host
  
- 5) \_\_\_\_\_ introduced the term ecology.
  - a) Hilaire
  - b) Lankester
  - c) E. Haeckel
  - d) T. H. Morgan
  
- 6) Life table primarily help in determining \_\_\_\_\_.
  - a) Type of ecosystem
  - b) Survival and reproductive patterns
  - c) Species richness in a community.
  - d) Density of an animal species.

- Q.2 Answer Any Three of the following 06**
- a) Define Synecology.
  - b) Define Natality.
  - c) Define Diversity Index.
  - d) Define Autecology.
  - e) Define Survivorship Curves.
- Q.3 Write a short note on Any Two of the following. 06**
- a) Discuss the characteristics of a desert Ecosystem.
  - b) Discuss the concept of Ecological succession with example.
  - c) Discuss the concept of Energy Flow in an ecosystem with example.
- Q.4 Answer the following. (Any Two) 06**
- a) Explain the difference between lotic and lentic freshwater ecosystem with example.
  - b) Explain Ecological Pyramid.
  - c) Explain relationship between Predation and Parasitism interspecific association with example.
- Q.5 Answer the following. (Any One) 06**
- a) Explain the significance of Biodiversity, Hot-Spots and Sacred groves in India with example.
  - b) Explain the abiotic factors that affect animal population and their influence in distribution of species.

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Set **P**

**B.Sc. (Biotechnology) (Semester - II) (New) (NEP CBCS) Examination:  
March/April - 2025  
Cell Biology (G05-0203)**

Day & Date: Friday, 16-May-2025  
Time: 12:00 PM To 01:30 PM

Max. Marks: 30

**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 considered the power house of the cell?
  - a) Nucleus
  - b) Mitochondria
  - c) Endoplasmic Reticulum
  - d) Golgi Apparatus
- 2) The cell theory was proposed by: \_\_\_\_\_.
  - a) Robert Hooke
  - b) Schleiden and Schwann
  - c) Charles Darwin
  - d) Gregor Mendel
- 3) Which of the following organelles is involved in the synthesis of proteins?
  - a) Mitochondria
  - b) Ribosomes
  - c) Chloroplasts
  - d) Lysosomes
- 4) Which type of cell contains a nucleus that is surrounded by a membrane?
  - a) Prokaryotic cell
  - b) Eukaryotic cell
  - c) Bacterial cell
  - d) Virus
- 5) The process of mitosis results in the formation of: \_\_\_\_\_.
  - a) Two haploid cells
  - b) Two diploid cells
  - c) Four haploid cells
  - d) One diploid and one haploid cell
- 6) Which of the following cytoskeletal elements is responsible for the movement of chromosomes during cell division?
  - a) Microtubules
  - b) Microfilaments
  - c) Intermediate filaments
  - d) Actin filaments

**Q.2 Answer of the following. (Any Three) 06**

- a) Explain the concept of cell theory and its significance in cell biology.
- b) Discuss the structure and function of mitochondria.
- c) What are lysosomes? Explain their role in cellular digestion.
- d) Describe the organization and structure of prokaryotic and eukaryotic cells.
- e) Explain the role of ribosomes in protein synthesis.

- Q.3 Write short answers. (Any Two) 06**
- a) Discuss the structure and function of the Golgi apparatus.
  - b) Explain the process of mitosis with the help of a diagram.
  - c) Discuss the different types of chromosomes based on the centromere position.
- Q.4 Answer of the following (Any Two) 06**
- a) Explain the structure and function of chloroplasts in plant cells.
  - b) What are microtubules and microfilaments? Discuss their role in cell movement and structure.
  - c) Explain the process of meiosis and its significance in sexual reproduction.
- Q.5 Answer of the following (Any One) 06**
- a) Discuss the concept of cell growth and differentiation. Include the phases of the cell cycle.
  - b) Explain the molecular basis of cancer and discuss the agent's promoting carcinogenesis.

Day & Date: Friday, 16-May-2025  
Time: 12:00 PM To 01:30 PM

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

## 06

- 1) Specific receptors of neurotransmitters present at \_\_\_\_\_.  
a) synaptic cleft                      b) post-synaptic membrane  
c) pre-synaptic membrane        d) synaptic vesicle
- 2) \_\_\_\_\_ aid in the process of cell adhesion.  
a) Cell receptors                      b) Transmembrane proteins  
c) Protease                              d) Cytokinins
- 3) The process by which extracellular messages translate into intracellular changes is termed \_\_\_\_\_.  
a) cell signaling                      b) cell adhesion  
c) signal transduction              d) cell transformation
- 4) \_\_\_\_\_ tissues detect changes inside and outside the body and respond by action potential.  
a) Epithelial tissue                      b) Connective tissue  
c) Muscular tissue                      d) Nervous tissue
- 5) \_\_\_\_\_ of the following is a type of endocytosis.  
a) Pinocytosis  
b) Phagocytosis  
c) Receptor-mediated endocytosis  
d) All of the mentioned
- 6) The chemical products of the cell are shipped and distributed by \_\_\_\_\_.  
a) ER lumen                              b) Golgi apparatus  
c) Lysosome                              d) Endosome

## 06

- Define nerve impulse.
- Define active transport.
- Define exocytosis.
- Define receptors.
- Draw neat and labelled diagram of Muscle cell.

- Q.3 Write short answers. (Any Two) 06**
- a) Strategies of cell division
  - b) Vesicle trafficking
  - c) Epinephrine signaling in glycogen metabolism
- Q.4 Answer of the following (Any Two) 06**
- a) Write a short note on endocytosis.
  - b) Write a short note on Microbial growth rate.
  - c) Write a short note on structure and function of nerve cells.
- Q.5 Answer of the following (Any One) 06**
- a) What is cell adhesion? Describe in details roles of various adhesion molecules.
  - b) What is Membrane transport? Describe in details different transport systems.

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**B.Sc. (Biotechnology) (Semester - II) (New) (NEP CBCS) Examination:  
March/April – 2025  
Plant Tissue Culture (G05-0205)**

Day & Date: Saturday, 17-05-2025  
Time: 12:00 PM To 01:30 PM

Max. Marks: 30

- 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 correct alternative. 06**

- 1) Select a microelement from the following required for plant nutrition.
 

a) Phosphorus	b) Zinc
c) Nitrogen	d) Sulfur
- 2) \_\_\_\_\_ is known as the Father of embryology.
 

a) Hamberlandt	b) Murashige
c) Skoog	d) Maheshwari and Guha
- 3) Plant tissue culture media can be sterilized by using \_\_\_\_\_.
 

a) autoclave	b) incubator
c) refrigerator	d) centrifuge
- 4) Heritable differences observed among plants propagated through tissue culture of a single mother plant is called as \_\_\_\_\_.
 

a) Somatic hybridization	b) Somaclonal variation
c) Totipotency	d) Senescence
- 5) Differentiation of organs from cultured cells or tissue is called as \_\_\_\_\_.
 

a) organ culture	b) tissue culture
c) organogenesis	d) dedifferentiation
- 6) Asexual plant multiplication starting from a single individual is \_\_\_\_\_.
 

a) haploid production	b) transgenesis
c) tissue engineering	d) clonal propagation

**Q.2 Answer the following. (Any Three) 06**

- a) Differentiate between laboratory fumigation and surface disinfection.
- b) Define totipotency.
- c) Enlist laboratory equipments used for aseptic manipulation.
- d) Define hybrids.
- e) Write any two applications of micropropagation.

- Q.3 Answer the following. (Any Two) 06**
- a) Explain scope of plant tissue culture.
  - b) Write the principle of laminar air flow unit.
  - c) Explain the principle of callus culture.
- Q.4 Answer the following. (Any two) 06**
- a) Write a note on somaclonal variations.
  - b) Write the stages of micropropagation.
  - c) Write a note on artificial seed production.
- Q.5 Answer the following. (Any one) 06**
- a) Give a detailed account on General laboratory setup.
  - b) Explain somatic embryogenesis and discuss factors affecting somatic embryogenesis.

Day & Date: Saturday, 17-05-2025  
Time: 12:00 PM To 01:30 PM

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

## 06

- Q.2 Answer the following. (Any Three)**

06

- Page 1 of 2

- Q.3 Answer the following. (Any Two) 06**
- a) Write Characteristics of animal Cell in Culture.
  - b) Write a note on Natural media.
  - c) Write in brief about cell counting.
- Q.4 Answer the following. (Any Two) 06**
- a) Explain in detail about Warm Trypsinization.
  - b) Explain Tests of identification- Karyotyping.
  - c) Write in detail about Synthetic media.
- Q.5 Answer the following. (Any One) 06**
- a) Explain in detail - Laboratory Design and Equipment required for animal cell culture.
  - b) Give a detail account on Methods of organ culture.

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**B. Sc. (Biotechnology) (सत्र – II) (नवीन) (NEP CBCS) परीक्षा:**

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 सुरुवात ——— 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) 0६
- 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) 0६
- १) रा. से. यो. चा इतिहास लिहा.
  - २) दत्तक खेडयामध्ये नियमित उपक्रमावर चर्चा करा.
  - ३) मतदार जनजागृती आणि नावनोंदणी शिबीर यावर चर्चा करा.
- प्र.४ दीर्घोत्तरी प्रश्न. (कोणताही एक) 0६
- १) रा. से. यो. चे महत्त्व स्पष्ट करा.  
किंवा
  - २) विशेष शिबिर कार्यक्रमातील नियोजन लिहा.
- प्र.५ दीर्घोत्तरी प्रश्न. 0६
- आरोग्य आणि रक्तदान शिबीर यावर वृत्तांत द्या.

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

Day & Date: Wednesday, 21-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 and fill in the blanks** **06**

- 1) \_\_\_\_\_ is celebrated as the World Environment Day.  
 a) 24<sup>th</sup> September                      b) 12<sup>th</sup> January  
 c) 15<sup>th</sup> August                            d) 05<sup>th</sup> 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.

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**B.Sc. (Biotechnology) (सत्र – II) (नवीन) (NEP CBCS) परीक्षा:**

**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 करुणा
  - 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)

0४

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

किंवा

ब) उत्तम नेतृत्वासाठी महत्वाची मूल्ये स्पष्ट करा.

Seat No.	
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Set **P**

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

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

Max. Marks: 15

**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.	
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Set P
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**B. Sc. (Biotechnology) (सत्र – II) (नवीन) (NEP CBCS) परीक्षा:**

मार्च/एप्रिल – २०२५

**Co-Curricular Course  
Sports (CC-203)**

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) खेळ म्हणजे शारिरीक श्रमाचा ——— समावेश असलेल्या क्रियाकलापांचा 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) अॅथलेटिक्स                                      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.	
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Set **P**

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

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

Max. Marks: 15

**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.

Set 

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**B.Sc. Biotechnology (सत्र – II) (नवीन) (NEP CBCS) परीक्षा:**  
मार्च/एप्रिल – २०२५  
**Co-Curricular Course**  
**Cultural (CC-204)**

वार, दिनांक : बुधवार, २१-०५-२०२५

कमाल गुणः 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.

03

- 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) 0६
- 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. 0६
- काव्यवाचन
- प्र.४ तपशीलवार उत्तर लिहा. (कोणताही एक) १२
- १) साहित्य कलेच्या सादरीकरणाचे प्रकार कोणकोणते आहेत?
  - २) अभिनयाची संकल्पना स्पष्ट करा.

<b>Seat No.</b>	
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**B.Sc. Biotechnology (Semester - II) (New) (NEP CBCS) Examination:  
March/April - 2025  
Co-Curricular Course  
Cultural (CC-204)**

Day & Date: Wednesday, 21-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 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.



<b>Seat No.</b>	
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Set P

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

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

Max. Marks: 15

**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

- Write the definition of fitness?
- What is the personal hygiene?
- How many liters of water an adult should drink per day?
- Write the factors of social health.

**Q.3 Write the detail answer (Any One)**

05

- Write the components of physical fitness and explain them with examples.
- Write the detailed work of the World Health Organization.



प्र.३ सविस्तर उत्तरे लिहा. (कोणताही एक)

०५

अ) योगाचे महत्त्व स्पष्ट करा.

किंवा

ब) प्राणायामाचे महत्त्व स्पष्ट करा.

Seat No.	
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Set **P**

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

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

Max. Marks: 15

**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 mouth
  - 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 of yoga.
- 2) Explain the importance of pranayama.

