

This question paper contains 3 printed pages]

HA—1002—2026

FACULTY OF ARTS/COMMERCE/SCIENCE

B.A./B.Com./B.Sc. (First Year) (First Semester) XAMINATION

APRIL/MAY, 2026

(NEP 2020 Pattern)

INDIAN KNOWLEDGE SYSTEM

Paper IKS 1101

(Undergraduate Level Students Studying Across All Faculties)

(Wednesday, 1-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) All questions carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* of the remaining four questions (Q. No. 2 to Q. No. 5).

(iv) Figures to the right indicate full marks.

(i) सर्व प्रश्नांना समान गुण आहेत.

(ii) प्रश्न क्र 1 अनिवार्य आहे.

(iii) उर्वरित चार प्रश्नांपैकी कोणतेही दोन प्रश्न सोडवा (प्र. क्र. 2 ते प्र. क्र. 5)

(iv) उजवीकडील अंक पूर्ण गुण दर्शवितात.

P.T.O.

1. Solve the following questions (2.5 marks each) : 10

- (i) Which subjects are included in the Indian knowledge system ?
- (ii) Name the *four* types of Pramana (means of knowledge) in Nyaya Philosophy.
- (iii) What is the importance of city planning in ancient Indian architecture ?
- (iv) What natural fertilizers were used in ancient Indian agriculture ?

खालील प्रश्न सोडवा (प्रत्येकी 2.5 गुण) :

- (i) भारतीय ज्ञान प्रणालीमध्ये कोणकोणते विषयांचा समावेश आहे ?
- (ii) न्याय दर्शनातील चार प्रकारचे प्रमाण सांगा.
- (iii) प्राचीन भारतीय स्थापत्यकलेतील शहर नियोजनाचे महत्व काय आहे ?
- (iv) प्राचीन भारतीय शेतीत कोणते नैसर्गिक खत वापरले जात असते ?

2. Discuss the contributions of Ayurveda, astronomy and mathematics to Indian science. 10

आयुर्वेद, खगोलशास्त्र, आणि गणित या भारतीय विज्ञानाच्या योगदानाचे विवेचन करा.

3. Explain the importance of the principles of Jain philosophy – ahimsa (non-violence), anekantavada (pluralism), aparigraha (non-possessiveness), and self-discipline. 10

जैन दर्शनाची तत्त्वे - अहिंसा, अनेकांतवाद, अपरिग्रह आणि आत्मसंयम यांचे महत्व स्पष्ट करा.

4. What is the concept of Indian economics ? 10

भारतीय अर्थशास्त्राची संकल्पना काय आहे ?

5. Discuss the contributions of Charaka Samhita, Sushruta Samhita, and Vagbhata in Ayurveda. 10

आयुर्वेदातील 'चरक संहिता' 'सुश्रुत संहिता व वाग्भट यांच्या योगदानाची चर्चा करा.

This question paper contains 2 printed pages]

HA—01—2026

**FACULTY OF HUMANITIES/SCIENCE AND
TECHNOLOGY AND COMMERCE MANAGEMENT**

B.A./B.Com./B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020 Pattern)

ENGLISH (Compulsory)

Paper I (HENGAEC1101)

(Developing Spoken Communication)

(Saturday, 4-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Attempt any *two* questions from Q. No. 2 to Q. No. 5.

(iii) Figures to the right indicate full marks.

1. Write short notes on :

10

(i) Non-verbal communication

(ii) Imperative sentences

(iii) Promoting the function

(iv) Telephonic conversation.

P.T.O.

2. Discuss the importance of spoken communication. 10
3. Prepare *five* common self-introduction questions with suitable answers. Your response should include the following points :
name, address, education, food habits, and hobbies. 10
4. Prepare an anchoring script of the inaugural function of the 'NSS Special Camp' organized by your college at the village nearest your college. 10
5. You are planning to go to a movie. Draft a phone conversation asking your friend to join you. 10

This question paper contains 2 printed pages]

HA—18—2026

FACULTY OF HUMANITIES

B.A./B.Sc./B.Com. (NEP) (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

MARATHI (MIL)

AECMAR-1101

गद्य, पद्य व उपयोजित मराठी-I

(Tuesday, 7-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) पहिला प्रश्न सोडविणे अनिवार्य आहे.

(ii) सर्व प्रश्नांना समान गुण आहेत.

1. थोडक्यात टिपा लिहा :

10

(अ) स्त्री-पुरुष तुलना

(ब) 'प्रयत्नवादी जीवन प्रवास' मधील शब्दांचे महत्व

(क) उंबरा ओलांडणाऱ्या बायका या कवीतेतील स्त्री व्यथा

(ड) कार्यालयीन पत्रलेखनाचे स्वरूप

P.T.O.

This question paper contains 2 printed pages]

HA—17—2026

FACULTY OF HUMANITIES

B.A./B.Sc./B.Com. (NEP) (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

HINDI (MIL)

HHINMIL-1101

साहित्य कलश और व्यावहारिक हिंदी, भाग-1

(Tuesday, 7-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) पहला प्रश्न अनिवार्य है।

(ii) प्रश्न क्रमांक 2 से 5 में से किन्हीं दो प्रश्नों के उत्तर लिखिए।

(iii) सभी प्रश्नों के समान अंक हैं।

1. टिप्पणियाँ लिखिए :

10

(अ) ब्लॉग लेखन की उपयोगिता

(ब) 'पंच परमेश्वर' कहानी का अलगू चौधरी

(क) आकाशवाणी के विज्ञापन की विशेषताएँ

(ड) कवि मैथिलीशरण गुप्त का परिचय।

P.T.O.

WT

(2)

HA—17—2026

2. 'उर्फ़ सैम' कहानी की कथावस्तु लिखिए। 10
3. 'गीत-फ़रोश' कविता का आशय समझाइए। 10
4. समाचार-पत्र के विज्ञापन की विशेषताएँ लिखिए। 10
5. ब्लॉग लेखन के अर्थ एवं स्वरूप पर चर्चा कीजिए। 10

HA—17—2026

2

This question paper contains 3 printed pages]

NEPJA—1010-101—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

CHEMISTRY

(Organic and Inorganic Chemistry)

(Thursday, 9-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

- N.B.** :— (i) All questions carry equal marks.
(ii) Question No. 1 is compulsory.
(iii) Solve any *two* of the remaining four questions (Q. No. 2 to 5).
(iv) Figures to the right indicate full marks.

1. Solve the following questions (2.5 marks each) : 10
- (a) Define the following terms with example :
- (i) Substrate
(ii) Reagent.
- (b) What is Huckel's Rule ? Explain the aromaticity of Anthracene.
- (c) What are alcohol ? Give its classification.
- (d) Explain the terms :
- (i) Atomic radius
(ii) Covalent radius.

P.T.O.

2. Solve the following questions : 10

(a) Explain the Homolytic and Heterolytic bond fission with suitable example.

(b) What is carbanion ? Give structure and stability of carbanion.

3. Solve the following questions : 10

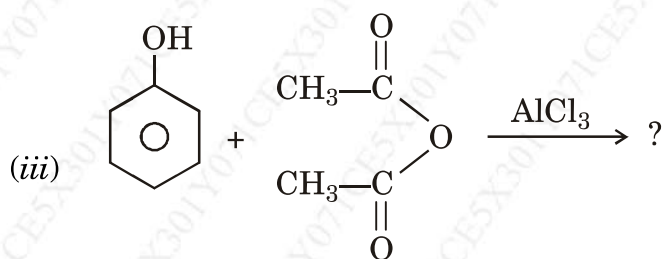
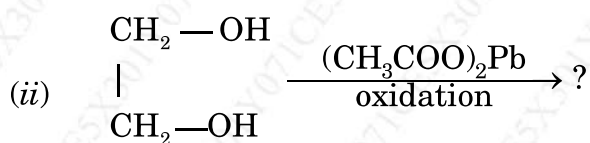
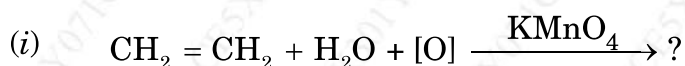
(a) Explain Friedel-Craft alkylation of benzene with mechanism.

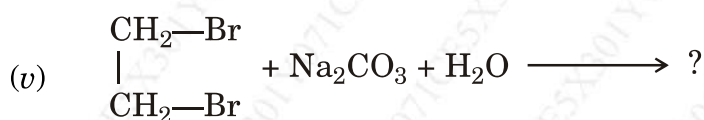
(b) (i) Explain the ortho para directing nature of —OH in Phenol.

(ii) Write any *five* general characteristics of *d*-block elements.

4. Solve the following questions : 10

(a) Predict the product :





(b) Explain acidic nature of phenol.

5. Solve the following questions :

10

- (a) Define electronegativity. Explain the factors affecting on it.
- (b) Define Ionization Energy. Discuss the ionization energy along a period and in a group.

This question paper contains 2 printed pages]

NEPJA—2020—101—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020)

PHYSICS

SPHYCT-1101

(Fundamental of Physics-I)

(Saturday, 11-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

- N.B.** :— (i) All questions are carry equal marks.
(ii) Question No. 1 is compulsory.
(iii) Solve any *two* of the remaining four questions (Q. No. 2 to Q. No. 5).
(iv) Figures to the right indicate full marks.

1. Solve the following questions compulsory (Each question **2.5** marks) : 10
- (a) Define Gravitational field intensity and write its SI unit.
 - (b) Define Viscosity of fluid.
 - (c) Define sound intensity and write its unit.
 - (d) Define extrinsic semi-conductor and write its types.

P.T.O.

2. (a) What is an Areal velocity ? Show that areal velocity of a particle under central force field remains constant. 10
- (b) State and derive the Newton's law of gravitation.
3. (a) Derive Bernoulli's equation. 10
- (b) State and explain Pascal's principle.
4. (a) State Newton's formula for the velocity of sound in air. What was its limitation ? 10
- (b) Explain the effect of temperature and pressure on the velocity of sound in air.
5. (a) Explain the construction and working of a Zener diode. Discuss its V-I characteristics. 10
- (b) Explain the working of an LED with its V-I characteristics.

This question paper contains 2 printed pages]

NEPJA—3010-101—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.A./B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020 Pattern)

MATHEMATICS

SMATCT-1101

(Topics in Algebra-I)

(Wednesday, 15-04-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) All questions carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Attempt any *two* of the remaining four questions (Q. No. 2 to Q. No. 5).

(iv) Figures to the right indicate full marks.

1. Attempt the following :

4×2.5=10

(a) Define union of sets with suitable example.

(b) Define one-one and onto functions.

P.T.O.

- (c) Define row rank and column rank of a matrix.
- (d) Define characteristics roots and characteristic vectors of a matrix.
2. Attempt the following : 10
- (a) Let A and B be subsets of a universal set v , then prove that
- $$(A \cup B)^c = A^c \cap B^c$$
- (b) Prove that, on non-empty set X , the equality relation is an equivalence relation.
3. Attempt the following questions : 10
- (a) If $f : X \rightarrow Y$ and $g : Y \rightarrow Z$ are surjective (onto) functions, then prove that $g \circ f$ is surjective (onto).
- (b) Prove that the function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = 3x + 2$ is a bijection.
4. Prove that the elementary operations do not alter the rank of matrix. 10
5. Attempt the following questions : 10
- (a) If X_1 is a solution of $AX = B$ and X_2 is any solution of the associated system $AX = 0$, then prove that $X_1 + X_2$ is a solution of $AX = B$. Further if Y is a solution of $AX = B$, then $Y - X_1$ is solution of $AX = 0$.
- (b) Solve the equations :
- $$x + 3y - 2z = 0$$
- $$2x - y + 4z = 0$$
- $$x - 11y + 14z = 0.$$

This question paper contains 2 printed pages]

NEPJA—2010—101—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

BOTANY

(Viruses, Bacteria and Algae)

(Saturday, 11-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Of the remaining, attempt any *two* questions.

(iii) Draw neat and labelled diagram wherever required.

1. Write brief notes on the following : 10

(a) Economic importance of viruses 2½

(b) Symptoms of Citrus Canker 2½

(c) Heterocyst 2½

(d) Application of algae in agriculture 2½

P.T.O.

2. Give an account of general characters of viruses. Add a note on classification of viruses on the basis of host. 10
3. Describe the ultrastructure of Bacterial cell. 10
4. Give an account of systematic position, occurrence and thallus structure of Nostoc. 10
5. Write systematic position, occurrence and describe thallus structure of Oedogonium. 10

This question paper contains 2 printed pages]

NEPJA—4010-101—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

COMPUTER SCIENCE

(SCSCCT-1101)

(Fundamentals of Computer Science)

(Friday, 17-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Attempt any *two* questions from Q. No. 2 to Q. No. 5.

1. Attempt the following :

4×2.5=10

(a) What is algorithm ?

(b) What is monitor ?

(c) Explain BCD code.

(d) Explain features of Windows OS.

P.T.O.

2. (a) Explain architecture of computer. 5
- (b) What is memory ? Explain types of memory. 5
3. (a) What is output device ? Explain any *two* output devices. 5
- (b) Explain in detail data scanning device. 5
4. (a) What is number system ? Explain Binary and Octal number system. 5
- (b) Distinguish between DOS and Windows. 5
5. (a) Explain types of software. 5
- (b) Explain any *five* external DOS commands. 5

This question paper contains 2 printed pages]

NEPJA—5140—101—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020 Pattern)

ELECTRONICS

(Fundamental of Analog and Digital Electronics)

(Monday, 20-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Solve any *two* questions from 2 to 5.

1. Solve the following :

10

(a) State the proportional voltage formula

(b) Explain an Ideal current source

(c) Convert $(1100)_2 = (?)_{10}$

(d) State De Morgan's Ist theorem

P.T.O.

2. Solve the following : 10
- (a) State and explain Kirchnhoff's voltage law with sign convention.
- (b) Explain the proportional current formula.
3. Solve the following : 10
- (a) State and explain Norton's theorem
- (b) State and explain the maximum power theorem.
4. Perform the following conversions : 10
- (i) $(10011)_2 = (?)_{\text{Gray}}$
- (ii) $(1001001)_2 = (?)_{\text{BCD}}$
- (iii) $(1111)_2 \times (101)_2$
- (iv) $(1010)_3 - (0011)_2$
5. Solve the following : 10
- (a) Explain universal property of NAND gate.
- (b) Explain associative and distributive law.

This question paper contains 2 printed pages]

NEPJA—4020-101—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

FISHERY SCIENCE

SFSCCT-1101

(Fish Pond Construction and Management)

(Friday, 17-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) All questions carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* questions from Q. Nos. 2 to 5.

1. Write short notes on the following :

4×2.5=10

- (a) Selection of site for fish pond construction
- (b) Harmful effects of oxygen deficiency in ponds
- (c) Fertilization of nursery ponds
- (d) Natural food material of fishes.

P.T.O.

WT

(2)

NEPJA—4020-101—2026

2. Describe preparation of stocking pond. 10
3. Write about the qualities of fish seed for fish culture. 10
4. Describe food and feeding habits of Indian major carps. 10
5. Describe common treatment methods for fish disease management. 10

This question paper contains 2 printed pages]

NEPJA-4030—101—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

INDUSTRIAL CHEMISTRY

Paper—SICHCT-1101

(Fluid Mechanics and Lubricant)

(Friday, 17-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Use of Scientific calculator and log table is allowed.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* from Q. No. 2 to Q. No. 5.

1. Solve the following :

2.5×4=10

(i) Explain free radical with suitable reaction.

(ii) What is fluid pressure ?

(iii) Explain valves.

(iv) Explain Iodine number of fluid.

P.T.O.

2. Solve the following : 10
- (i) Explain Aldol condensation and Cannizzaro reaction with suitable reaction mechanism. 5
- (ii) Explain material balance of distillation unit operation. 5
3. Solve the given example : 10
- (i) The acetic acid is to be pumped the rate $0.02 \text{ m}^3/\text{s}$ through the 75 mm inner diameter pipe 70 m long horizontal. What is the Reynolds number ?
- Data : 5
- Density of Acetic acid = 1060 kg/m^3
- Viscosity of Acetic acid = 0.0025 kg/m-s
- (ii) Explain equation of continuity with neat labelled diagram. 5
4. Solve the following : 10
- (i) Explain venturimeter with neat labelled diagram. 5
- (ii) Explain Reciprocating pump with neat labelled diagram. 5
5. Solve the following : 10
- (i) Explain classification and properties of fluid. 5
- (ii) Explain Redwood Viscometer with neat labelled diagram. 5

This question paper contains 2 printed pages]

NEPJA-5230—101—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

MICROBIOLOGY

Paper-I (SMICCT-1101)

(Basic Microbiology)

(Monday, 20-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) Question No. 1 is compulsory.

(ii) Attempt any *two* questions from question nos. 2 to 5.

(iii) Draw neat and labelled diagram wherever required.

1. Write brief notes on the following :

10

(a) Pasteurization

(b) Objective lenses

(c) Acidic stain

(d) Flagella.

P.T.O.

2. Describe in detail beneficial and harmful role of microorganisms in human and animal health. 10
3. Explain in detail principle, construction working and applications of scanning electron microscope (SEM). 10
4. Describe in detail principle, mechanism, procedure and observation of Gram's staining. 10
5. Describe in detail structure, chemical composition and functions of bacterial capsule. 10

This question paper contains 2 printed pages]

NEPJA—3020—101—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (First Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020)

ZOOLOGY

(Biodiversity of Non-Chordates)

(Wednesday, 15-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Solve any *two* questions out of Q. No. 2 to Q. No. 5.

(iii) **10** marks for each question.

(iv) Draw well labelled diagram wherever necessary.

1. Write short notes on the following :

10

(a) Class Sporozoa

(b) Polymorphism in Hydrozoa

(c) Vermicomposting

(d) Gastropoda

P.T.O.

2. Describe general characters of Phylum Porifera. 10
3. Describe life cycle of *Ascaris lumbricoides*. 10
4. Describe Nervous system of Cockroach. 10
5. Discuss affinities of Hemichordata. 10

This question paper contains 2 printed pages]

HA—1003—2026

FACULTY OF ALL

B.A./B.Com./B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020 Pattern)

VALUE EDUCATION COURSE

(VECCOI-1151)

(Constitution of India)

(Thursday, 2-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 will be compulsory.

(ii) Students are required to solve a total of 3 questions.

(iii) Students need to solve any *two* of the remaining four questions

(Q. No. 2 to Q. No. 5).

(i) प्रश्न क्र. 1 अनिवार्य आहे.

(ii) एकूण 3 प्रश्न सोडविणे आवश्यक आहे.

(iii) प्र. क्र. 2 ते 5 पैकी कोणतेही दोन प्रश्न सोडवा.

P.T.O.

1. Write short notes on (*all*) (2.5 marks each) : 10
- (i) Sources of Indian constitution
- (ii) Right to equality
- (iii) Functions of the Council of Ministers
- (iv) Briefly state the financial relations between centre and the state.
- थोडक्यात टिपा लिहा (सर्व) (प्रत्येकी 2.5 गुण) :
- (i) भारतीय राज्यघटनेची उगमस्थाने
- (ii) समतेचा हक्क
- (iii) मंत्री मंडळाचे कार्य
- (iv) केंद्र आणि राज्य यांच्यातील वित्तीय संबंध थोडक्यात सांगा.
2. Describe the working of the Constitutional Assembly. 10
- संविधान सभेच्या कामकाजाचे वर्णन करा.
3. State the directive principles of state policy. 10
- राज्याच्या धोरणाची मार्गदर्शक तत्त्वे सांगा.
4. Explain the powers and functions of Indian President. 10
- भारताच्या राष्ट्रपतीचे अधिकार व कार्य स्पष्ट करा.
5. Explain the legislative relations between the centre and the state. 10
- केंद्र-राज्य यांच्यामधील कायदेविषयक संबंध स्पष्ट करा.

This question paper contains 2 printed pages]

HA—25—2026

**FACULTY OF HUMANITIES, SCIENCE AND TECHNOLOGY AND
COMMERCE AND MANAGEMENT**

B.A./B.Com., B.Sc. (First Semester) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020)

ENGLISH (Compulsory)

HENGAEC-1151

(Developing Written Communication-II)

(Wednesday, 8-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

- N.B. :**— (i) Question No. 1 is compulsory.
(ii) Attempt any *two* (2) questions from question No. 2 to 5.
(iii) Figures to the right indicate full marks.

1. Write short notes on : 10
- (i) Topic sentence
- (ii) Precis writing
- (iii) Types of emails
- (iv) Components of meeting agenda.

P.T.O.

2. Explain the importance of punctuation marks with suitable examples. 10
3. Write in detail about the structure of report writing. 10
4. Draft to resume for the post of Marketing Director, including key components such as contact information, career objective, education, skills, work experience and other relevant sections. 10
5. Write a notice about the “Class Test Examination” including all the important parts of a notice. 10

This question paper contains 2 printed pages]

HA—10—2026

FACULTY OF HUMANITIES

B.A. (NEP) (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

MARATHI (MIL)

Paper II (AECMAR-1151)

(मराठी साहित्य आणि व्यावहारिक मराठी)

(Monday, 6-04-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) पहिला प्रश्न सोडविणे अनिवार्य आहे.

(ii) प्रश्न क्रमांक 2 ते 5 यापैकी कोणतेही दोन प्रश्न सोडवा.

(iii) सर्व प्रश्नांना समान गुण आहेत.

1. थोडक्यात टिपा लिहा :

10

(अ) साहित्य म्हणजे काय ?

(ब) नाटक

(क) गीताचे स्वरूप

(ड) बातमी.

P.T.O.

प्रश्न क्रमांक 2 ते 5 यापैकी कोणतेही दोन प्रश्न सोडवा :

2. दत्ता भगत यांच्या 'वाटा-पळवाटा' या नाटयांशातून आलेला आंबेडकरी विचार स्पष्ट करा. 10
3. 'आम्ही तुफानातील दिवे' या गीतातून वामनदादा कर्डक यांनी कोणता विचार मांडला आहे ? 10
4. वर्तमान पत्रातील बातमीचे स्वरूप स्पष्ट करा. 10
5. जाहिरात म्हणजे काय ? ते सांगून जाहिरातीचे प्रकार विशद करा. 10

This question paper contains 2 printed pages]

HA—09—2026

FACULTY OF HUMANITIES

B.A./B.Com./B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP Pattern)

HINDI (MIL)

HHINMIL-1151

[साहित्य कलश और व्यावहारिक हिंदी (भाग II)]

(Monday, 6-04-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) पहिला प्रश्न अनिवार्य है ।

(ii) प्रश्न क्रमांक 2 से प्रश्न क्रमांक 5 में से किन्हीं दो प्रश्नों के उत्तर लिखिए ।

(iii) सभी प्रश्नों के अंक समान हैं ।

1. टिप्पणियाँ लिखिए :

10

(अ) कृत्रिम मेधा का अर्थ

(ब) दुष्यंत कुमार का सामान्य परिचय

(क) 'नेताजी का चश्मा' कहानी के हालदार साहब

(ड) पाठ से वाक् प्रणाली के उपयोग ।

P.T.O.

2. 'मुंबई काण्ड' कहानी की मूल संवेदना लिखिए । 10
3. 'कदम मिलाकर चलना होगा' कविता का आशय लिखिए । 10
4. वाक् से पाठ प्रणाली की विशेषताएँ लिखिए । 10
5. कृत्रिम मेधा की उपयोगिता लिखिए । 10

This question paper contains 2 printed pages]

NEPJA—2010—201—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

BOTANY

SBOTCT-1151

(Fungi, Lichens and Mycorrhiza)

(Monday, 13-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Of the remaining attempt any *two* questions.

(iii) Draw neat and labelled diagram wherever required.

1. Write brief notes on the following :

10

(a) Systematic position and occurrence of Eurotium

(b) Application of fungi in agriculture

(c) General characters of Lichens

(d) General characters of Mycorrhiza

P.T.O.

2. Describe general characters and nutrition of fungi. 10
3. Describe structure of mycelium and asexual reproduction in *Alternaria*. 10
4. Describe in detail types of Lichens. 10
5. Describe types of mycorrhiza in detail. 10

This question paper contains 2 printed pages]

NEPJA—1010-201—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

CHEMISTRY

SCHECT-1151

(Physical and Inorganic Chemistry)

(Friday, 10-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) All questions carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* of the remaining four questions (Q. Nos. 2 to 5).

(iv) Figures to the right indicate full marks.

(v) Use of calculator and logarithmic table is allowed.

1. Solve the following questions (2.5 marks each) : 10

(a) Explain Pauli's exclusion principle.

(b) Calculate root mean square velocity of oxygen (O_2) molecule at $137^\circ C$.
($R = 8.314 \text{ JK}^{-1}\text{mol}^{-1}$).

(c) Give the difference between physical adsorption and chemical adsorption.

(d) Define oxidation and reduction on the basis of electronic concept.

P.T.O.

2. Solve the following questions : 10
- (a) State the postulates of Bohr's atomic theory.
 - (b) Derive an expression for energy of an electron in n th Bohr orbit of H-atom. Calculate energy of an electron in first Bohr orbit of H-atom.
3. Solve the following questions : 10
- (a) Derive the Kinetic gas equation, $PV = \frac{1}{3} mnu^2$.
 - (b) (i) Define critical constants of gases.
(ii) Explain the structure of Xenon tetrafluoride (XeF_4).
4. Solve the following questions : 10
- (a) Explain electrophoresis and electro-osmosis in colloids.
 - (b) Discuss the general applications of colloids.
5. Solve the following questions : 10
- (a) Discuss the rules to assign oxidation number.
 - (b) Give the uses of noble gases.

This question paper contains 2 printed pages]

NEPJA—4010-201—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP Pattern)

COMPUTER SCIENCE

SCSCCT-1151

(Programming in C Language)

(Saturday, 18-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) Question No. 1 is compulsory.

(ii) Attempt any *two* questions from Q. No. 2 to Q. No. 5.

(iii) Draw neat and labelled diagrams wherever necessary.

1. Attempt the following :

4×2.5=10

(a) Explain history of C language.

(b) Explain arithmetic operators in C.

P.T.O.

- (c) Describe "goto" statement in C.
- (d) What is union ?
2. Attempt the following : 10
- (a) What is compiler ? Explain. 5
- (b) What is flowchart ? Draw and explain the flowcharting symbols. 5
3. Attempt the following : 10
- (a) Explain in detail C tokens. 5
- (b) Explain "printf" and "scanf" statement in C. 5
4. Attempt the following : 10
- (a) Explain If-statement with example. 5
- (b) Write a C program to print 1 to 100 numbers using for-loop. 5
5. Attempt the following : 10
- (a) What is function ? Explain with example. 5
- (b) Explain concept of recursion. 5

This question paper contains 2 printed pages]

NEPJA—5140—201—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020 Pattern)

ELECTRONICS

(Electronic Devices and Digital Logic Circuit)

(Tuesday, 21-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

- N.B.** :— (i) Question No. 1 is compulsory.
(ii) All questions carry equal mark.
(iii) Solve any *two* of remaining four questions Q. No. 2 to Q. No. 5.
(iv) Figures to right indicate full marks.

1. Solve the following questions : 10
- (a) Explain P-type and N-type semiconductor
- (b) Explain the F-F biasing of transistor
- (c) Designing 2 : 1 MUX
- (d) Explain the clocked S-R flip-flop.

P.T.O.

2. (a) Explain the working of Zener diode. 5
- (b) Explain in detail photodiode. 5
3. (a) Explain the construction of NPN and PNP transistor. 5
- (b) Define α_{dc} and β_{dc} and give the relation between them of transistor. 5
4. (a) Explain in detail full adder with truth table. 5
- (b) Explain the BCD to seven segments decoder. 5
5. (a) Explain the operation of JK flip-flop with truth table. 5
- (b) Explain the D-type and T-type flip-flop in detail. 5

This question paper contains 2 printed pages]

NEPJA—4020-201—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

FISHERY SCIENCE

SIFSCT-1151

(Freshwater Fish Culture System)

(Saturday, 18-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) All questions carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* from questions 2 to 5.

1. Write short notes on the following : 10

(a) Synthetic hormones used in induced breeding

(b) Natural food materials of cultivable fishes

(c) Catla catla

(d) Preparation of pituitary gland suspension.

P.T.O.

WT

(2)

NEPJA—4020-201—2026

2. Describe extensive fish farming methods. 10
3. Describe various qualities of cultivable fishes. 10
4. Write details about cage culture. 10
5. Write in detail about water quality for fish culture. 10

This question paper contains 2 printed pages]

NEPJA-4030—201—2026

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

INDUSTRIAL CHEMISTRY

Paper–SICHCT-1151

(Heat Transfer, Fuels and Water Analysis)

(Saturday, 18-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Use of Scientific calculator and log table is allowed.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* from Q. No. 2 to Q. No. 5.

- | | |
|---|-----|
| 1. Solve the following : | 10 |
| (i) Write a note on Insulation. | 2.5 |
| (ii) Explain Planck's law of Radiation. | 2.5 |
| (iii) Explain excess air and theoretical air. | 2.5 |
| (iv) Explain chemical oxygen demand. | 2.5 |

P.T.O.

2. Solve the following : 10
- (i) Explain heat flow in series with neat labelled diagram and mathematical expression for it. 5
- (ii) Solve the following example :
- A furnace is constructed with 225 mm thick of fire brick, 120 mm of insulating brick and 225 mm of the building brick. The inside temperature is 1200 K (927°C), and the outside temperature is 330 K (57°C) find the heat loss per unit area and the temperature at the junction of the fire brick and insulating brick. Data-K for fire brick = 1.4 W/(m.K).
3. Solve the following : 10
- (i) Explain Application of Dimensional Analysis and heat transfer by convection. 5
- (ii) Explain Individual and overall heat transfer coefficient. 5
4. Solve the following : 10
- (i) Explain Ultimate Analysis of coal. 5
- (ii) Explain petroleum product from crude oil. 5
5. Solve the following : 10
- (i) What is permanent and temporary hardness of water ? 5
- (ii) What are the essential characteristics of drinking water ? 5

This question paper contains 2 printed pages]

NEPJA—3010-201—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.A./B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020 Pattern)

MATHEMATICS

SMATCT-1151

(Analytical Geometry)

(Thursday, 16-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :- (i) All questions carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* of the remaining four questions (Q. No. 2 to Q. No. 5).

(iv) Figures to the right indicate full marks.

1. Solve the following :

4×2.5=10

(a) The coordinates of a point P are (3, 12, 4). Find the direction cosines of the line OP.

(b) Find the equation of the line passing through the two points $(x_1, y_1, z_1); (x_2, y_2, z_2)$.

P.T.O.

- (c) Why the degree of a surface is unaltered by any transformation of axes ?
- (d) Find the centre and radius of the sphere :

$$x^2 + y^2 + z^2 - 6x + 8y - 10z + 1 = 0.$$

2. (a) Find the equation of the plane in terms of the intercepts a , b , c which it makes on the axes. 5
- (b) The direction cosines l , m and n of two lines are connected by the relations $l + m + n = 0$ and $2lm + 2ln - mn = 0$. Find them. 5
3. (a) Find the symmetrical form of the equations of the line $x + y + z + 1 = 0$, $4x + y - 2z + 2 = 0$. 5
- (b) Show that the line $\frac{x-2}{3} = \frac{y-3}{4} = \frac{z-4}{5}$ is parallel to the plane $2x + y - 2z = 3$. 5
4. (a) OA, OB, OC are three mutually perpendicular lines through the origin, and their direction cosines are that $l_1, m_1, n_1; l_2, m_2, n_2; l_3, m_3, n_3$. If OA = OB = OC = a . Prove that the equation of the plane ABC is $(l_1 + l_2 + l_3)x + (m_1 + m_2 + m_3)y + (n_1 + n_2 + n_3)z = a$. 5
- (b) Find the equation of the plane $2x + 3y + 4z = 7$ referred to the point $(-1, -3, 2)$ as origin; direction of the axes remaining the same. 5
5. (a) Show that a plane section of a sphere is a circle. 5
- (b) Find the equation of the sphere through the four points $(0, 0, 0)$, $(-1, 1, 1)$, $(1, -1, 1)$ and $(1, 1, -1)$. 5

This question paper contains 2 printed pages]

NEPJA-5230—201—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP-2020)

MICROBIOLOGY

Paper—SMICCT-1151

(Microbial Physiology)

(Tuesday, 21-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) Question No. 1 is compulsory.

(ii) Attempt any *two* questions of the remaining question from
(Q. nos. 2 to 5).

(iii) Illustrate your answer with suitable diagram.

1. Write in brief :

10

(a) Incineration

(b) Significance of pure culture

(c) Batch culture

(d) SASP.

P.T.O.

2. Describe in detail ideal properties of disinfectant. 10
3. What is culture medium ? Explain types of culture media. 10
4. Explain in detail cell number method for measurement of growth. 10
5. Explain in detail effect of pH and osmotic pressure on bacterial growth. 10

This question paper contains 2 printed pages]

NEPJA—2020—201—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020)

PHYSICS

SPHYCT-1151

(Fundamental fo Physics-II)

(Monday, 13-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

N.B. :— (i) All questions are carry equal marks.

(ii) Question No. 1 is compulsory.

(iii) Solve any *two* from remaining questions (Q. No. 2 to Q. No. 5)

(iv) Figures to the right indicate full marks.

1. Attempt *all* questions :

2.5×4=10

(a) Define objective and eyepiece.

(b) What is self inductance ? State its SI unit.

(c) State Norton's theorem.

(d) State Boyle's law and write its expression.

P.T.O.

2. Write any *ten* difference between Ramsden eyepiece with Huygen's eyepiece. 10
3. Explain self inductance of coil and self inductance of solenoid. 10
4. State the explain Kirchhoff's law. Discuss resistor in series and parallel circuit. 10
5. State ideal gas equation. Explain all gas laws in detail. 10

This question paper contains 2 printed pages]

NEPJA—3020—201—2026

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2026

(NEP 2020)

ZOOLOGY

SZOOCT-1151

(Biodiversity of Chordates)

(Thursday, 16-4-2026)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—30

- N.B. :-** (i) All questions carry equal marks.
(ii) Q. No. 1 is compulsory.
(iii) Solve any *two* of the remaining questions (Q. No. 2 to Q. No. 5)
(iv) Figures to the right indicate full marks.
(v) Draw well labelled sketch, wherever necessary.

1. Solve the following questions : 10
- (a) Salient features of chordates
(b) Aestivation in frog
(c) Advantages of birds migration
(d) Ear of rat

P.T.O.

2. Explain the general features of cephalochordata. 10
3. Describe the respiratory system of scoliodon. 10
4. Explain the general characters of reptiles with suitable examples. 10
5. Describe the nervous system of rat. 10