Q. P. Code: 2A1KANL01T

Reg No | | | | | | | | | | | |

B. Sc I Semester (SEP Regular) Examination, Feb/March -2025

Subject: Kannada (Basic) ಆವಶ್ಯಕ ಕನ್ನಡ

(ಸಾಹಿತ್ಯ ಸೊಬಗು-೧)

Duration of Paper: 3 Hrs. **Maximum Marks :80**

Instruction to the Candidate: ಭಾಷೆ ಮತ್ತು ಬರಹದ ಶುದ್ಧಿಗೆ ಗಮನಕೊಡಲಾಗುವುದು.

ಪ್ರ 1) **ಬೇಕಾದ ಮೂರಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.** **(10x3=30)**

a) ಸಮೂಹ ಮಾಧ್ಯಮಗಳಲ್ಲಿ ಕನ್ನಡ ಭಾಷೆಯು ಹೇಗೆ ಬಳಕೆಯಾಗುತ್ತಿದೆ? ಅದರ ಅಸ್ತಿತ್ವ ವಿವರಿಸಿ.

b) ವಚನಗಳಲ್ಲಿ ಮೂಡಿ ಬಂದಿರುವ ಸಾಮಾಜಿಕ ಆಶಯ ಕುರಿತು ಬರೆಯಿರಿ.

c) 'ರೊಟ್ಟ'ಕಥೆ ಹಸಿವಿನ ಧಾರುಣತೆಯೊಂದಿಗೆ ವರ್ತಮಾನದ ಘಟನೆ ಮತ್ತು ವ್ಯಕ್ತಿಯ ಮುಖಾಮುಖಿಯಾಗಿದೆ ವಿವರಿಸಿ.

d) 'ಉಚಲ್ಯಾ ' ಅಲೆಮಾರಿ ಸಮಾಜದ ಬದುಕಿನ ಯಾತನೆಯಾಗಿದೆ ಚರ್ಚಿಸಿರಿ.

e) 'ರಕ್ತರಾತ್ರಿ – ವಿಮರ್ಶೆ' ಕಂದಗಲ್ಲ ಹನುಮಂತರಾಯರ ಪ್ರತಿಭಾ ಮೌಲ್ಯವನ್ನು ಹೆಚ್ಚಿಸಿದೆ ವಿವರಿಸಿರಿ.

ಪ್ರ 2) **ಬೇಕಾದ ನಾಲ್ಕಕ್ಕೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.** **(5x4=20)**

a) ಬಸವಣ್ಣ

b) ಅಕ್ಕಮಹಾದೇವಿ

c) ಲಕ್ಷ್ಮೀಶ

d) ಅನ್ನಯಜ್ಞ

e) ಅಮ್ಮನಿಂದ ಮಗಳಿಗೆ ಪತ್ರ-ಮಾದರಿ

f) ಸರ್ಕಾರಿ ಪತ್ರದ ಮಾದರಿ

ಪ್ರ-3 ಬೇಕಾದ ಮೂರಕ್ಕೆ ಸಂದರ್ಭದೊಡನೆ ಸ್ಪಷ್ಟೀಕರಿಸಿರಿ **(5X3=15)**

a) "ಆಸೆಯೆಂಬುದು ಅರಸಂಗಲ್ಲದೆ ಶಿವಭಕ್ತರಿಗುಂಟೆ ಅಯ್ಯಾ?"

b) "ಬೇಡಿ, ಯಾರನ್ನೂ ಹೊಡೀಬೇಡಿ"

c) "ಅನ್ನದಾನ ಮಹಾಯಜ್ಞ! ಅನ್ನ ಹೀನ ಆಳನು"

d) "ನಿಮ್ಮ ಹುಡುಗ ಶುದ್ಧ ಲೇಖನ ಬರೆದಿದ್ದಾನೆ"

e) "ಮಾಣಕ್ಯಾ ಎಲ್ಲಾದನ ಹೇಳು?"

ಪ್ರ-3. ಒಂದೇ ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ **(15X1=15)**

1) ಡಾ. ಕೆ.ವಿ. ನಾರಾಯಣರ ಜನ್ಮಸ್ಥಳ ಯಾವುದು?

2) ಬಸವಣ್ಣನವರ ತಂದೆ-ತಾಯಿ ಹೆಸರೇನು?

3) ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮಳ ವಚನಾಂಕಿತ ಯಾವುದು?

4) 'ಬೇಲೂರಿನ ಶಿಲಾಬಾಲಿಕೆಯರು' ಕವಿತೆಯನ್ನು ಬರೆದವರು ಯಾರು?

5) ನಾಗೇಶ ಹೆಗಡೆ ಅವರ ಹುಟ್ಟೂರು ಯಾವುದು?

6) ನಾವಿರುವ ಬ್ರಹ್ಮಾಂಡವನ್ನು ಏನೆಂದು ಕರೆಯುತ್ತಾರೆ?

7) ಸುಭಾಷ್ ಪಾಳೇಕರ್ ಎಲ್ಲಿ ಜನಿಸಿದರು?

8) 'ಕಲ್ಲು ಕರಗುವ ಸಮಯ' ಕಥಾಸಂಕಲನದ ಲೇಖಕರು ಯಾರು?

9) ಬೇಂದ್ರೆಯವರ ಕಾವ್ಯನಾಮ ಯಾವುದು?

10) ಲಕ್ಷ್ಮಣ ಗಾಯಕವಾಡರ ಆತ್ಮಕತೆ ಯಾವುದು?

11) 'ರಕ್ತ ರಾತ್ರಿ ವಿಮರ್ಶೆ' ಬರೆದವರು ಯಾರು?

12) ರಕ್ತ ರಾತ್ರಿ ನಾಟಕ ಬರೆದವರು ಯಾರು?

13) ಡಾ. ವಸಂತ ಕುಲಕರ್ಣಿಯವರ ಜನ್ಮ ಸ್ಥಳ ಯಾವುದು?

14) 'ಡೆಮಿಆಫಿಷಿಯಲ್ ಲೆಟರ್' ಎಂದು ಯಾವ ಪತ್ರವನ್ನುಕರೆಯುತ್ತಾರೆ?

15) ಡಿ.ವಿ.ಜಿ ಯವರ ಪೂರ್ಣ ಹೆಸರೇನು?

QP CODE: 47032

Reg. No. | | | | | | | | |

First Semester B.Sc.6 (NEP) Degree Examination,
January / February 2025
PHYSICS (DSC)
(Repeaters)
A0320 / A030320 : Mechanics and Properties of Matter

Time: 2 Hours Max. Marks : 60

Instructions:

1. Calculators can be used to calculate problems.
2. Write intermediate steps during problems.

1. Answer any SIX of the following questions: (6 × 2 = 12)

a) What is elastic collision ?

b) Define angular momentum.

c) State Newton's law of Gravitation.

d) Define orbital velocity.

e) What is Neutral axis?

f) Define stress

g) Define Angle of contact.

h) Mention the difference between stream line and turbulent flow.

2. Answer any ONE full question "a and b" OR "c and d"

a) Discuss inelastic collisions between two particles which stick together in
i) Laboratory frame of reference
ii) Centre of mass frame of reference. (8)

b) A sand bag of mass 10 kg is suspended with long weightless string. A bullet of mass 0.2 kg is fired with a speed of 20 ms^{-1} in to the bag and stays in the bag. Calculate speed acquire by the bag. (4)

OR

c) What is Rocket and Derive an expression for the final velocity of single stage Rocket. (8)

d) A mass of 5 kg at rest explodes in to 2 pieces of 2 kg and 3 kg. If 2 kg piece is moving with velocity of 10 ms^{-1}, calculate the velocity of 3 kg piece. (4)

3. **Answer any ONE full question "a and b" OR "c and d" :**

a) State Kepler's II law of planetary motion on the basis of law of conservation of Angular momentum prove Kepler's II law. (8)

b) A satellite is orbiting around the earth at a height of 200 km radius and mass of earth are 6400 km and 6×10^{24} kg respectively. Calculate orbital velocity and period of satellite having mass 400 kg (Given $G = 6.67 \times 10^{-11} Nm^2 / kg^2$.) (4)

OR

c) Derive an expression for moment of inertia of rectangular lamina about an axis through its centre and parallel to one side. (8)

d) A circular disc of mass 0.5 kg and radius 0.1m is revolving at the rate of 60 rpm about an axis passing through its centre and it is perpendicular to its plane. Calculate its moment of inertia and kinetic energy. (4)

4. **Answer any ONE full question "a and b" OR "c and d" :**

a) Derive an expression for bending moment of a beam. (8)

b) Calculate Young's modulus of the material if the rigidity modulus is 4.2×10^{10} Nm^{-2} and bulk modulus is $1.4 \times 10^{10} Nm^{-2}$ (4)

OR

c) Obtain the expression for couple per unit twist of the wire fixed at one end and twisted by a couple at free end. (8)

d) A bar of geometrical moment of inertia 2×10^{-3} kg m^2 is bent into an arc of radius 2m. Calculate bending moment of the bar. The value of Young's Modulus of elasticity of material of the bar is $12 \times 10^{10} Nm^{-2}$ (4)

5. **Answer any ONE full question "a and b" OR "c and d" :**

a) Derive an expression for rise of liquid in capillary tube. (8)

b) Find the excess of pressure inside a spherical drop of water of radius 1 mm. Surface tension of water $= 73 \times 10^{-3}$ N/m (4)

OR

c) Derive Stoke's formula and terminal velocity of lead ball falling down through viscous liquid. (8)

d) Calculate viscosity of given liquid when a steel ball of radius 5×10^{-4} m falls through it with terminal velocity 30 ms^{-1} $\rho = 7.8 \times 10^3$ kg m^{-3}, $\sigma = 0.87 \times 10^3$ kg m^{-3}. (4)

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Q. P. Code:2A1CHEM01T

Reg No | | | | | | | | | | | |

B.Sc. I Semester (SEP Regular) Examination, Feb/March -2025
Subject: Chemistry

Duration of Paper: 3 Hrs. **Maximum Marks :80**

Instruction to the Candidate: 1) All questions are compulsory
2) Draw neat diagrams and give equations wherever necessary.

Q.No1. Answer any Ten questions . **10x2=20**

a) Write de Broglie relation and its significance.

b) State Aufbau principle .

c) Write the outer electronic configuration of chromium (Z=24) and copper (Z=29).

d) What are nucleophiles ? give example.

e) What is free radical ? mention how it is formed.

f) What happens when acetylene is subjected to polymerization .

g) Define RMS velocity. Give its equation .

h) Define mean free path.

i) Mention two factors affecting the distribution constant .

j) What are indeterminate errors .

k) What are titrant and titrand?

l) What are redox titrations ? give example .

Q.No2. Answer any Three questions . **(3x5=15)**

a Explain the hydrogen atomic spectrum with a diagram .

b. Explain the significance of quantum numbers.

c. What is orbital? Write the shape and directional nature of 's'and ' p' orbitals.

d. Explain the following of filling electrons in orbitals

i)Hund's rule of multiplicity.

ii) (n+1) rule.

Q.No3. Answer any Three questions. **(3x5=15)**

a. Write the preparation of alkenes by

i) Dehydration of alcohols

ii) Dehydrohalogenation of alkyl halides.

b. Explain the following with example.

i) Saytzeff's elimination reaction

ii) Hydroboration of alkenes

c. What is peroxide effect? Discuss its mechanism with the addition of HBr to propene.

d. What is ozonolysis? Explain the ozonolysis of 2-butene.

Q.No 4. Answer any Three questions. **3x5=15**

a. Explain the critical phenomenon by Andrew's isotherms of CO_2.

b. Derive the expressions for critical constants in terms of Vander waal's constants.

c. Derive the modified distribution law when solute undergoes association in one of the solvents.

d. Show how the multi-step solvent extraction is more efficient than single step extraction.

Q.No 5 Answer any Three questions. **3x5=15**

a. What are errors? Write about determinate errors.

b. What is titration curve? Give the titration curves for all the four types of acid-base titrations.

c. What are metal ion indicators? Explain the theory of metal ion indicators with respect to the Erichrome Black-T used in EDTA titrations.

d. Write about the following.

i) Redox indicators and Redox titration curves.

ii) Precipitation titrations.

Q. P. Code:126BSC01PHYDSC91T

Reg No | | | | | | | | | | | |

B.Sc. I Semester (NEP-Repeater) Examination, Feb/March -2025
Subject: PHYSICS
Mechanics and Properties of Matter

Duration of Paper: 2 Hrs. **Maximum Marks :60**

Instruction to the Candidate:
1) Calculators are allowed to solve the problems.
2) Write intermediate steps.

1) Answer any SIX questions of the following **6x2=12M**

a. State law of conservation of linear momentum.
b. State law of conservation of energy.
c. What is escape velocity?
d. State parallel axis theorem.
e. State Hooke's law.
f. What is torsional pendulum?
g. Define surface tension.
h. What is turbulent flow?

2) Answer any ONE full question "a and b" OR "c and d".

a. Derive expression for final velocity in case of elastic collision in 1-D center frame of reference. 8M
b. Distinguish between elastic and inelastic collision with examples. 4M

OR

c. State the principle of rocket. Obtain expression for velocity of a single stage rocket. 8M
d. A rocket of mass $50x10^3$ Kg is launched vertically up. It is fired upward after burning some part of fuel, weighs $15x10^3$Kg. The emitted gases have velocity of 3 km/s with respect to the rocket. Calculate the speed of rocket assuming the rocket starts from rest. 4M

3) Answer any ONE full question "a and b" OR "c and d".

a. State and prove Kepler's third law of planetary motion. 8M
b. What is weightlessness? Explain. 4M

OR

c. Derive expression for moment of inertia of a rectangular lamina about an
(i) axis in the plane of the lamina passing through its center and parallel to its length
(ii) axis perpendicular to the plane of the lamina passing through its center. 8M
d. A uniform square lamina having a radius of gyration $8.5x10^{-2}$m and length of equivalent compound pendulum is $15x10^{-2}$m. Hence find the period of oscillation. 4M

4) **Answer any ONE full question "a and b" OR "c and d".**

a. Drive the relation between three moduli of elasticity Y,K and η. 8M

b. Derive expression for work done per unit volume during volume strain . 4M

OR

c. Derive the expression for young's modulus of beam supported at its ends & loaded at the middle. 8M

d. The young's modulus of copper is 100 GPa and Poisson's ratio is 0.45.Calculate modulus of rigidity . 4M

5) **Answer any ONE full question "a and b" OR "c and d".**

a. Derive an expression for rise of liquid in a capillary tube. 8M

b. Calculate the excess of pressure between the inside and outside of a soap bubble of radius 2cm. Surface tension of soap solution is $4x10^{-2}$ N/m. 4M

OR

c. Discuss Poiseuille's method for determining the coefficient of viscosity of liquid. 8M

d. Explain the effects of temperature on viscosity. 4M

Q. P. Code: 2A1PHYM01T

Reg No | | | | | | | | | | | |

B.Sc. I Semester (SEP Regular) Examination, Feb/March -2025
Subject: PHYSICS
Mechanics and Properties of Matter

Duration of Paper: 3 Hrs. **Maximum Marks :80**

Instruction to the Candidate:
1) Calculate is allowed to solve the problems.
2) Write intermediate steps.

1) Answer any Ten of the following 10x2=20M

a) State the law of conservation of linear momentum

b) Mention the difference between elastic and inelastic collision.

c) State work-energy theorem.

d) State the universal law of gravitation.

e) State Kepler's first law of planetary motion.

f) What is moment of inertia? and on what factor does it depends?

g) Define stress and strain.

h) What is neutral axis?

i) What is bending moment?

j) Define surface tension and write its dimensional formula.

k) What are the effects of temperature and impurities on surface tension?

l) Define viscosity?

2) Answer any ONE full question "a and b" OR " c and d "

a) Derive the final velocity in case of elastic collision in laboratory frame of reference 10M

b) A shell of mass 32 kg explodes into two parts one part of mass 25 kg moves in original direction with velocity 25 m/s, what is the velocity of the other particle? 5M

OR

c) What is satellite? Derive the expression for velocity of rocket in single stage? 10M

d) A rocket starts from rest with exhaust velocity of gas equals to 204 km/sec. Calculate the velocity attained by rocket, when its mass is reduced to $1/20^{th}$ of original value? 5M

3) Answer any ONE full question "a and b" OR " c and d "

a) State and explain law of gravitation and derive expression for orbital velocity 10M

b) Calculate moments of inertia of lamina of mass 3kg whose length and breadth are 2m and 1m respectively (i) about an axis passing through its center and parallel to one side. (ii) about axis passing through its center and perpendicular to its plane. 5M

OR

c) Give that theory of compound pendulum and show that period of oscillation about point of suspension and point of oscillation are same. 10M

d) The period of earth is 24 Hrs, calculate period of planet whose radial distance is 16 times that of the earth from sun. 5M

4) Answer any ONE full question "a and b" OR " c and d "

a) Derive the relation between Y, K and η 10M

b) Calculate Young's modulus of wire, if modulus of rigidity and bulk modulus are 4.2×10^{10} N/m^2 and 1.4×10^{10} N/m^2. 5M

OR

c) Derive the expression for Young's modulus in case of bending of beam supported at its ends and loaded at middle. 10M

d) A uniform metal disc of wire of diameter 0.1m and mass 1.4kg is fixed symmetrical to lower end of wire (l=1m & D=1.44mm). The upper end is fixed, calculate 'η' of wire if period is 1.66sec. 5M

5) Answer any ONE full question "a and b" OR " c and d "

a) Derive the expression for capillary rise of liquid in a capillary tube. 10M

b) Calculate excess pressure inside spherical drop of water of diameter 4mm. Given surface tension of water is 72×10^{-3} N/m. 5M

OR

c) Drive an expression of Stoke's formula for viscosity. 10M

d) Mention the difference between turbulent and streamline flow. 5M

Q. P. Code:126BSC01LANAEC03T/ 126BCA01LANAEC03T

Reg No | | | | | | | | | | | |

B.Sc/BCA. I Semester (NEP Repeater) Examination, Feb/March -2025
Subject: Generic English -1

Duration of Paper: 2 Hrs. **Maximum Marks :60**

Instruction to the Candidate: Read the questions carefully, write answers legibly and clearly.

I. Answer the following questions in word, a phrase or a sentence each: **(10x1=10)**

1. What is the main cause of soil erosion ?
2. What does the author compare water in a landscape to ?
3. What is the long form of BBC ?
4. How far is the station from Baldeo's tribal village ?
5. Who takes over the charge of watchman after the death of Baldeo ?
6. Who translated 'Vachana 820' ?
7. How was the speaker's country like in past glory in 'To India My Native Land' ?
8. What is the form of the poem 'To India My Native Land' ?
9. What do the roads signify in the poem 'The Road not Taken' ?
10. How many roads diverged in a yellow wood ? **(1x10=10)**

II.

1. 'Life can not exist on earth without water'. Explain.

OR

2. Sketch the character of Baldeo.

III. **(1x10=10)**

1. What role does the poet see for himself with regard to his country in 'To India My Native Land' ?

OR

2. Comment on the central rheme of the poem 'The Road not Taken ?

IV. Answer any Two of the following: **(2x5=10)**

1. Introduce yourself before a panel of interview members as an eligible candidate for the post o a manager.
2. Write at least five most common ways for making requests.
3. Write instructions on the task of 'preparing lemon juice' in a paragraph by using the words such as firstly, after this, next, then, the next step is, subsequently, in the following stage, etc.
4. Write an enquiry dialogue between you and manager for opening saving bank account i State Bank of India.

V Answer any Four of the following sets:

A. Use the following words as directed: **(5x1=5)**

1. 'Slow' as an adverb in a sentence.
2. 'Manage' as a noun in a sentence
3. 'Nobility' as an adjective in a sentence
4. 'Sing' as a noun in a sentence
5. 'Gentle' as an adverb in sentence

B. Fill in the blanks with suitable articles: **(5x1=5)**

1. _____ Sun sets in the west.
2. I had _____ apple for breakfast.
3. My father is _____ doctor.
4. I have _____ umbrella.
5. I have completed _____ MBA degree.

C) Fill in the blanks with suitable prepositions: **(5x1=5)**

1. He studied _____ Oxford.
2. He lives _____ Bombay.
3. It is a secret _____ you and me.
4. Ravana was killed _____ Rama.
5. We will be meeting _____ Friday.

D) Convert the following direct question into indirect questions: **(5x1=5)**

1. Where does he play Tennis?
2. When does the next train leave?
3. Does that store sell shampoo?
4. Will she be able to come next week ?
5. What are you doing ?

E) Frame the negative questions: **(5x1=5)**

1. You saw Ann yesterday.
2. It would be nice to paint that wall green.
3. The postman has come.
4. They are ready for class.
5. He is sure of his success.

F) Frame the questions as directed: **(5x1=5)**

1. George broke the glass. (Frame WH question to get underlined word as answer)
2. Rama told me that story. (Frame WH question to get underlined word as answer)
3. They will be arriving soon,_____ (add a question tag)
4. Yes, you are sympathetic. (Frame yes/no question)
5. No, he wasn't nervous (Frame yes/no question)

Q. P. Code: 2A1ENGL01T

Reg No | | | | | | | | | | | |

B.Sc I Semester (SEP Regular) Examination, Feb/March -2025
Subject: Basic English

Duration of Paper: 3 Hrs. **Maximum Marks :80**

Instruction to the Candidate: Read the questions carefully, write answers legibly and clearly.

Q.No. 1. Answer any TEN of the following in a sentence or two: **10x2=20**

1. How according to the author, is the second kind of book owner in the essay 'How to Mark a Book'?
2. What was Behrman's master piece?
3. What does Self- Reliance primarily advocate?
4. Who wrote the poem 'Song of Youth'?
5. What type of tree does the speaker find in the bower in the poem 'Nutting' ?
6. What according to Dr. APJ Abdul Kalam is considered a crime?
7. What is 'verb'?
8. What is 'antonym'?
9. What is 'article' in grammar?
10. How do you start an informal self- introduction?
11. What is 'dialogue'?
12. Mention any two road safety rules for cyclists?

Q.No.2.1. Answer any One of the following : **1x10=10**

a. How does the author argue that marking up a book enhances comprehension and retention?

b. 'Behrman sacrificed his life for someone, he did not know. It was a supreme sacrifice, a selfless service.' Discuss .

2.2 Write a short on any One of the following: **1x5=5**

a. Emerson's philosophy in 'Self – Reliance'

b. The significance of water

Q.No.3.1. Answer any One of the following : **1x10=10**

a. Discuss the central theme of the poem, 'Song of Youth'

b. 'The Road not Taken' is a metaphor of life.' Justify this statement.

3.2 Write a short note on any One of the following: **1x5=5**

a. The description of nature in the poem 'Nutting.'

b. The theme of scientific curiosity and wonder in the poem 'A Universe of Atoms, an Atom in Universe'.

Q.No.4.1 **Fill in the blanks with suitable nouns, adjectives, verbs and adverb given in the bracket:** **5x1=5**

(sofa, busy, gained, apples, clearly)

1. New York is a ---------- city.
2. The teacher explains difficult concepts ----------.
3. The child's toy is under the ----------.
4. She ---------- a lot of knowledge from reading .
5. He ate two ---------- for lunch.

4.2 **Fill in the blanks with suitable articles / prepositions:** **5x1=5**

1. -------- sun rises in the east.
2. I received a letter ---------- my sister.
3. Iron is -------- useful metal.
4. ---------- thing of beauty is joy forever .
5. I am fond ---------- writing letters.

4.3 **Write the synonyms, antonyms, affixes and concord of the following:** **5x1=5**

1. Angry (synonym)
2. Buy (antonym)
3. Correct (affix)
4. Cold (antonym)
5. He ---------- (go) to Delhi yesterday.

Q.No. 5. **Answer any Three of the following :** **3x5=15**

1. Imagine that you are the secretary of college union. You have invited the district commissioner as the chief guest for the college Annual Day. Write a speech to introduce his/ her at the function.
2. Write an imaginary dialogue between a student and a clerk on getting admission for B.Sc-I.
3. Write a description of your dream job.
4. Explain the road safety rules for drivers.