FACULTY OF ENGINEERING

B.E. I – Semester (AICTE) (Backlog) Examination, November 2021

Subject: Essence of Indian Traditional Knowledge

Time: 2 Hours   Max. Marks: 70

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**

1. What is heritage?
2. Define Philosophy?
3. Write a short note on Northern Indian Languages?
4. How many Vedas – Explain?
5. What is Ahimsa?
6. What do you mean by conscience?
7. What is knowledge?
8. Indian Painting? Explain in brief.
9. Write a short note on Science and Scientists.
10. NEP-New Education Policy-2020? Explain in brief.

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. Explain the importance of Culture in human Literature?

12. Discuss about the Culture and Civilization?

13. Explain in detail the role of Sanskrit in Indian literature?

14. Write an essay on Indian Languages and Literature?

15. Explain the basic characteristics of Religion?

16. Write an essay on "Fine Arts in India?

17. What are the aims of Indian Education system?

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(Missing data, if any, may be suitably assumed)

Note: i) First Question is compulsory. Answer any three questions from the remaining six questions.
   ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
   iii) Missing data, if any, may suitably be assumed.

1.Answer any four of the following questions: **(4x4=16Marks)**
 (a) Explain the common characteristics of Indian Philosophy?
 (b) What are the general characteristics of Culture?
 (c) Write a note on literature of South India?
 (d) What is sunyavada? Explain.
 (e)What are the different sects of Jainism?
 (f) Explain the concept of "Indian handicrafts?
 (g) What are the aims of Indian Education System?

                                                                (3x18=54Marks)

2(a) Explain the importance of culture in human literature?
 (b) Write a note on Civilization and Heritage?

3(a) Write an essay on Culture and Literature?
 (b) Discuss about the religion and Philosophy?

4(a) Explain the development of Indian painting
 (b) What is Syadvada?

5(a) Write a note on Dance and Drama
 (b) Discuss the four Noble Truth of Buddhism?

6(a) Discuss what about NEP-2020
 (b) Write a note on development of Indian Science and Technology?

7(a) Discuss the role of Education in social change
 (b) What are the role of Scientists in Ancient India.
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FACULTY OF ENGINEERING

B.E. I– Semester (AICTE) (Backlog) Examination, November 2021
Subject: Indian Constitution

Time: 2 hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART-A

Answer any five questions: **(5x2=10 Marks)**

1. What are the Recommendations of the Nehru Reports?
2. Importance of Swaraj Movement.
3. Write a note on Preamble
4. Write about Article-360
5. What is Cripps Proposal
6. What are the fundamental duties mentioned in the Indian Constitutions
7. Write a note on Socialist Principals
8. What is the History of Urban local Bodies
9. What are the special features of Planning Commission
10. What is the purpose and objective of National Commission for women?

PART-B

Answer any four questions: **(4x15=60 Marks)**

11. Explain the Government of Indian Act of 1919
12. Explain the Impact of the British Colonial Rule in India
13. What are the powers and functions of council of Ministers at central level?
14. Explain the features of 73rd amendment act of Indian Constitution
15. Explain the powers and functions of Chief Minister of the state
16. Explain the need and importance of Human Rights Commission
17. Write Short Notes on
    a. Ghandian Principle
    b. Presidentail activism
    c. Importance of Chief Minister
    d. Sarkaria Commission.

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FACULTY OF ENGINEERING
B.E. I - Semester (AICTE) (Backlog) Examination, November 2021

Subject: Indian Constitution

Time: 2 Hours   **Max. Marks: 70**

Note: i) **First Question is compulsory. Answer any three questions from the remaining six questions.**
   ii) **Answer to each question must be written at one place only and in the same order as they occur in the question paper**.
   iii) **Missing data, if any, may suitably be assumed.**

1   Answer any four questions.   **(4x4 = 16 Marks)**

a   What is the role of Constituent Assembly?
b   Write a note on Impeachment Procedure.
c   List a few Items Mention in the Concurrent List and State List.
d   What do you understand by Decentralisation and its role in administration of our country?
e   Write a note on Ghandian Principals.
f   Write a about the formation of NITI Ayog.
g   How does Voting Behaviour effects the Elections.

(3x18 = 54 Marks)

2   (a) Critically examine the impact of the national; movement on the making constitution of India.
    (b) Explain the Salient Features of Indian Constitution.

3   (a) Describe in a brief the powers and functions the President of India.
    (b) Discuss the Financial Relations between Union Govt. and State Govt.

4   (a) Explain the Role and powers of Prime Minister of Indian Government.
    (b) Explain the Powers and Functions of Governor of the State.

5   (a) Write in brief the significance of Directive Principles of State Policy.
    (b) Explain the Fundamental Rights and its importance enshrined in the Indian Constitution.

6   (a) Explain the features of 73rd Amendment Act.
    (b) Explain the need and importance of Human Rights Commission.

7   (a) Explain the powers and functions of Election Commission of India.
    (b) Writes the Role and composition of National Commission of Women.

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FACULTY OF ENGINEERING
B.E. I-Semester (CBCS) (Backlog) Examination, November 2021

Subject : Engineering Chemistry - I

Time: 2 hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)
PART-A
Answer any five questions: **(5x2=10 Marks)**

1 Differentiate extensive and intensive properties.
2 State second law of thermodynamics. Give one example.
3 What is phase rule principle? Explain terms in it.
4 Calculate the degrees of freedom in the following system.
   (i) dry ice equilibrium with carbon dioxide gas
5 What is hardness of 'water? Write its various types of units.
6 Distinguish between 'priming' and 'foaming' in the water treatment.
7 Define graft co-polymer. Give one example.
8 Write the structure of nylon 6,6 and its properties.
9 List out the differences between Buna-S and Butyl rubbers.
10 What is the purpose of glazing of white ware?

PART-B
Answer any four questions: **(4x15=60 Marks)**

11 (a) Explain the first law of thermodynamics and its limitations.
   (b) Discuss the entropy changes in reversible and irreversible expansion of an ideal gas against vacuum.

12 (a) What is condensed phase rule? Discuss phase diagram for two component system (Ag – Pb system).
   (b) Draw and label phase diagram of Copper-Nickel system. Write its applications.

13 (a) A standard hard water contains 15g of $CaCO_3$ per liter, 20 ml of this $CaCO_3$ solution required 25 ml of EDTA solution. 100 ml of sample of water is required for 18 ml of EDTA solution. The same sample after boiling required 12 ml of EDTA solution. Calculate the temporary hardness of water sample in terms of ppm.
   (b) Explain the causes, effects and prevention of formation of scale and sludge as boiler troubles.

14 (a) List out the properties and engineering applications of Bake lite.
   (b) What is intrinsic conducting polymers? Explain the various applications of conducting polymers.

15 (a) Define lubricant. Discuss the hydrodynamic and extreme pressure lubrication mechanism.
   (b) Describe the requirements of good refractory material and their properties.

16 (a) Explain criteria in terms of free energy for spontaneity and reversibility of a process with significance.
   (b) What do mean by water softening? Explain the softening of hard water by ion exchange method.

17 (a) Explain the terms: (i) viscosity index (ii) saponification number
   (b) Explain preparation, properties and engineering applications of PVC.

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FACULTY OF ENGINEERING
B.E. I-Year (Backlog) Examination, November 2021

Subject: Engineering Mechanics

Time: 2 hours   **Max. Marks: 75**

Note: Missing data, if any, may be suitably assumed.
PART – A
**Answer any seven questions.**   **(7x3 = 21 Marks)**

1 Define force and its characteristics.

2 Define triangular law of force system and principle of transmissibility.

3 Differentiate between dot product and cross product.

4 Differentiate between limiting friction, static friction, and dynamic friction.

5 A semi circular area with its diameter resting on x axis, what is the height of the centroid above the central diameter.

6 Define polar moment of inertia.

7 Difference between rectilinear translation and curve linear translation.

8 State D' Alembert's principle.

9 State work energy principle.

10 What is impact? Differentiate direct and oblique impact.

PART – B
**Answer any three questions.**   **(3x18 = 54 Marks)**

11 Bar AB or negligence weight is subjected to a vertical force of 3KN and of horizontal force of 1.5kN as shown in figure 2. Determine the angle 'θ' at which the equilibrium exists, assume smooth inclined surfaces.

Fig 2
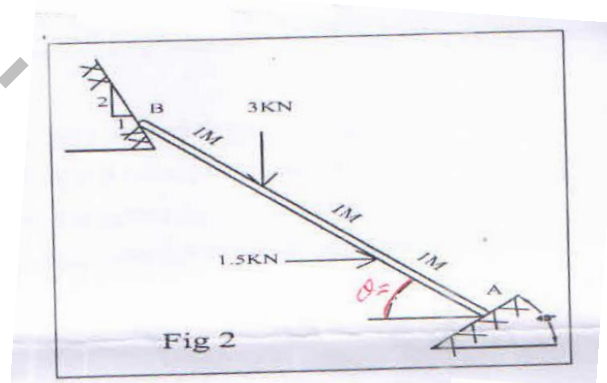
12 Determine the resultant of the system of concurrent forces having the following magnitudes and passing through the origin and indicated points P = 140N (3, -6, 2) ; R = 260N (-12, 4,-3); F = 90N(3, 6, -6). Also find the direction angle of the resultant.

13 What force 'P' must be applied to the weightless wedges shown in Figure 3 to start them under the 1000N block. The angle of friction for all contact surface is 10°.

Fig 3
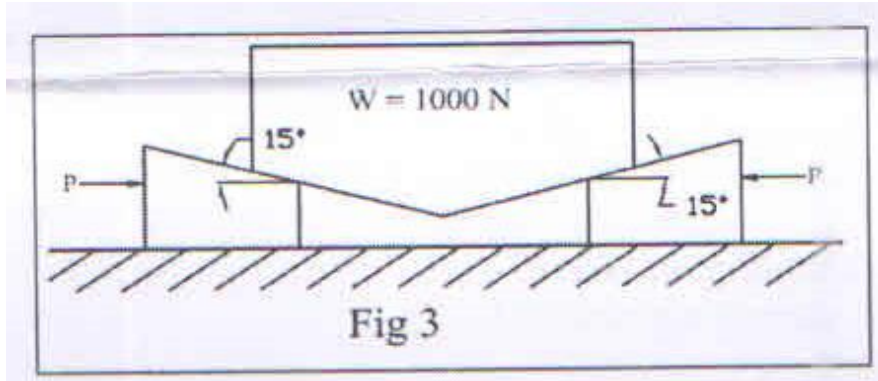
14 An I section consists of 100mmx10mm top and bottom flanges connected by a centrally placed web 10mmx150mm. Determine the moment of inertia of the section about its centroid axes.

15 Determine the centroidal distance of a right angle triangle.

16 A balloon rises   from the ground with a constant acceleration of 3m/s^2. Five second later, a stone is thrown vertically up from the launching site what must be the minimum initial velocity of the stone for it to just touch the balloon? Note that the balloon and the stone have the same velocity at contact.

17 A 2.274kg ball moving at 3mps to the right at 60° to the horizontal collides with a 4.54kg ball moving horizontally leftward at 3mps. At the moment of impact, the line joining the centres of the balls is horizontal. If e = 0.6, determine the amount and direction of the velocity of each ball directly after impact.

Fig 4

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