Programme: B.Sc. Honours in Computer Science (Major) 2023-2024

SEMESTER-I

COURSE Code: 23CSCM12
Title : ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Model Paper

Max Marks: 60

Section A

Answer any five questions from the following ($4M\times 5 = 20M$)

1. Define vectors and discuss vector addition.
2. Define the mean, median, and mode of a given dataset.
3. Write the laws of thermodynamics and their significance.
4. Write the properties of electromagnetic waves.
5. Discuss the branches of chemistry and their significance.
6. Explain the periodic table.
7. Write a short note on vitamins.
8. Explain their importance in living organism.
9. Explain various number systems
10. Differentiate between Analog and Digital Signals.

Section B

Answer all the questions (8M$\times 5 = 40M$)

11. (A) Calculate the trigonometric ratios for a given angle and discuss their relations. Provide examples.

(OR)

(B) Define vectors and discuss vector addition. Explain the Cartesian form of vectors and the scalar and vector product.

12. (A) Explain the difference between Newtonian mechanics and relativistic mechanics in the context of the motion of objects.

(OR)

(B) Compare and contrast acoustic waves and electromagnetic waves, discussing their properties and applications.

13. (A) Define the scope of chemistry and its importance in daily life.

(OR)

(B). Describe the applications of chemistry in industry and technology, with a focus on chemical manufacturing and pharmaceuticals.

14.(A) Explain how physics is applied in various industries and technologies, such as electronics, robotics, and aerospace.

(OR)

(B). Describe the applications of chemistry in industry and technology.

15. (A) Explain various networking devices

(OR)

(B). Explain about error correction and detection.

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