Total No. of Questions : 5]

SEAT No. :

PE-5000

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S.Y. B.Sc.

COMPUTER SCIENCE

CS-201-IKS-T : Indian Knowledge System in Computing

(Rev. 2024) (Semester - III)

Time : 2 Hours] *[Max. Marks : 35*

Instructions to the candidates:

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

Q1) **Attempt any Eight of the following :** **[8 × 1 = 8]**

a) List two sutras of factorization.
b) Divide 345 by 23 by vedic method.
c) Define Anumana in Nyaya philosophy.
d) What is care based reasoning.
e) Who is the founder of Nyaya philosophy?
f) How many sutras are approximately present in pannini's Ashthadhyaya?
g) Name one ancient cryptographic technique need in kautilya's Arthashastra.
h) Give one similarity between ancient and modern cryptographic practices.
i) What is meru prastara?
j) What is Vedic Mathematics?

Q2) **Attempt any four of the following :** **[4 × 2 = 8]**

a) Define the term Ashthadhyayi and its significance.
b) Name the six orthodox Schools of Indian philosophy.
c) Define argumentation and list the types of argumentation.
d) Why can machine learning be not considered as truly intelligent in the vedantic sense?
e) What does two - factor authentication mean in modern cryptography?

Q3) **Attempt any two of the following :** **[2 × 4 = 8]**

a) Explain with example how recurssion works in pannini's grammar.
b) Discuss the significance of Nyaya sutra and its contribution to Indian logic.
c) Explain chandrashastras binary logic and combinational techniques.

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Q4) **Attempt any two of the following :** **[2 × 4 = 8]**

a) Explain the five step syllogism of Nyaya inference with real life examples.

b) Explain structure of mind in Sankhya philosophy. How do its components relate to cognitive function? Compare it with how AI or machine learning processes information.

c) Factorize the quadratic equation $5x^2 + 5x + 4$ by using both sutras. Also write benefits of using vedic math factorization.

Q5) **Attempt any one of the following :** **[1 × 3 = 3]**

a) Design a flowchart that demonstrates how a student can use chandasastra's binary logic to identify a sanskrit meter.

b) What do you mean by Arthashastra? Explain cryptographic techniques in Arthashastra vs modern cryptography.



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