V Semester B.C.A. Examination, Jan./Feb. 2025
(NEP) (Freshers/Repeaters)
COMPUTER SCIENCE
Quantitative Techniques

Time : 2½ Hours   Max. Marks : 60

Instruction : *Answer **any four** from **each** Section.*

SECTION – A

I. Answer **any four** questions. **Each** question carries **2 marks** :   (4×2=8)

1) What is the divisibility rule of 11 ? Give an example.

2) Find HCF of $\frac{2}{3}, \frac{8}{9}, \frac{16}{81}$ and $\frac{10}{27}$.

3) The ratio of the ages of Tina and Rakesh is 9 : 10 respectively. Ten years ago the ratio of their ages was 4 : 5 respectively. What is the present age of Rakesh ?

4) What would be the amount of compound interest on Rs. 5,000 at 5% rate of interest P.A. for 3 years ?

5) By selling a cycle for Rs. 4,860, a student loses 19%. What is the cost price ?

6) Define research and mention its objectives.

SECTION – B

II. Answer **any four** questions. **Each** question carries **5 marks** :   (4×5=20)

7) Solve $\log 4 + \frac{1}{3} \log 125 - \frac{1}{5} \log 32$.

8) The angle of elevation of the top of a tower at a point on the ground is 30° on walking 24 m towards the tower the angle of elevation becomes 60°. Find the height of the tower.

9) In what time will Rs. 1,200 amounts to Rs. 1,323 at 5% compound interest ?

P.T.O.

10) On selling a pen at 5% loss and a book at 15% gain Karim gains Rs. 7. If he sells the pen at 5% gain and the book at 10% gain then he gains Rs. 13. What is the actual price of the book ?

11) Explain article, workshop and seminar.

12) Define teaching. Explain the characteristics of teaching.

SECTION – C

III. Answer **any four** questions. **Each** question carries **8** marks :   (4×8=32)

13) Find the number of arrangements of the letters of the word INDEPENDENCE. In how many of those arrangements   **8**

   i) do the word start with P ?

   ii) do all the vowels occur together ?

   iii) do all the vowels not occur together ?

   iv) do the vowels begin with I and end with P ?

14) a) What was the day of the week on 16th July 1776 ?   **4**

   b) At what time between 2 and 3'O Clock will the hands of a clock be together ?   **4**

15) a) Calculate the true discount and present worth for a bill of Rs. 10,000 due 9 months from now at an annual interest rate of 10%.   **6**

   b) If X is 10% more than Y then by what percentage is Y less than X ?   **2**

16) a) Define communication. Give the characteristics involved in communication.   **6**

   b) Define thesis writing.   **2**

17) a) Explain the different types of research.   **4**

   b) Discuss about effective classroom communication.   **4**

18) a) A train travelling with constant speed crosses a 90 m long platform in 12 sec and 120 m long platform in 15 sec. Find the length of the train and its speed.   **4**

   b) A bag contains 6 white and 4 black balls. Two balls are drawn at random. Find the probability that they are of the same colour.   **4**