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Reg. No. P 1 8 IW 2 1 50005

III Semester M.C.A. Degree Examination, June/July - 2023

COMPUTER SCIENCE

Quantitative, Teaching and Research Aptitude

(CBCS Scheme Y2k20)

Paper : 3 MCA 2

Time : 3 Hours **Maximum Marks : 70**

Instructions to Candidates:

All Parts are compulsory.

PART - A

Answer any Five of the following questions. Each question carries 6 marks.(5×6=30)

1. a) Check whether the following numbers are prime or composite. **(3+3)**

   (i) 241 (ii) 391 (iii) 571

   b) Which of the following numbers are divisible by 3?

   (i) 541326 (ii) 5967013 (iii) 614823

2. A man spends 3/5 of his salary on house rent, 3/10 of his salary on food and 1/8 of his salary on conveyance. If he has Rs.1400 left with him, find his expenditure on house rent, food and conveyance.

3. In a mixture of 60 liters, the ratio of milk and water is 2:1. If this ratio is to be 1:2, then what quantity of water should be added?

4. Rohan took a loan of Rs.1500 with simple interest for as many years as the rate of interest. If he paid Rs.540 as interest at the end of loan period, what was the rate of interest?

5. The average of 25 student's marks is 18. The average of first twelve of students is 14 and that of the last twelve is 17. Find the marks of thirteenth student.

6. What was the day of the week on 15th August 1947?

7. Explain different types of research.

8. Distinguish between formal and distance education.

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PART - B

Answer any Four questions. Each question carries10 marks. **(4×10=40)**

9. a) The product of LCM and HCF of two numbers is 24. The difference between the two numbers is 2. Find the numbers. **(5+5)**

   b) Find the number of arrangements of the letters of the word INDEPENDENCE. In how many of these arrangements,

   (i) Do the words start with P?

   (ii) Do all the vowels always occur together?

10. a) IF log 2=0.3010 and log 3=0.4771, find the values of **(5+5)**

   (i) Log 25 (ii) Log 4.5

   b) 'A' can do a piece of work in 7 days of 9 hours each and 'B' can do it in 6 days of 7 hours each. How long will they take to finish the work, by working together for 8 2/5 hours a day?

11. a) A man travelled from the village to the post office at the rate of 25 kmph and walked back at the rate of 4 kmph. If the whole journey took 5 hours 48 minutes, find the distance of the post-office from the village. **(5+5)**

   b) One year ago, the ratio of Manoj and Sachin's age was 6:7. Four years hence, this ratio would become 7:8. How old is Sachin?

12. a) After two successive discounts, a tie with a list price of Rs.120 is available at Rs.90. If second discount is 9%, what is the first discount? **(5+5)**

   b) A Train passes a station in 36 seconds and a passes a lamppost on the platform in 20 seconds. If the speed of the train is 54 kmph, find the length of the platform.

13. a) A bag contains 6 Red and 4 Blue balls. Two balls are drawn at randomly. Find the probability that they are of the same colour. **(5+5)**

   b) Raju, Kushal and Virat start at same time, from the same stating point and run in the same direction on a circular ground. Raju completes a round in 250 seconds, Kushal in 300 seconds and virat in 150 seconds. Find after what time will they meet again at the starting point?

14. a) Explain the factors affecting teaching. **(5+5)**

   b) Distinguish between seminar , conference and symposium.

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