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III Semester M.C.A. Degree Examination, May/June - 2025

COMPUTER APPLICATIONS

Quantitative Teaching and Research Aptitude

(CBCS Scheme 2020-21)

Paper : 3MCA1

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates :

- 1) Answer any **Five** questions from Part - A, each question carries **6** marks.
- 2) Answer any **Four** questions from Part - B, each question carries **10** marks.

PART - A

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

1. Find the value of $4 - \frac{5}{1 + \frac{1}{3 + \frac{1}{2 + \frac{1}{4}}}}$
2. There are five boxes in a cargo hold. The weight of the first box is 200 kg and the weight of the second box is 20% more than the weight of the third box, whose weight is 25% more than the first box's weight. The fourth box at 350 kg is 30% lighter than the fifth box, what is the difference in the average weight of the four heaviest boxes, and the four lightest boxes.
3. The man's present age is two-fifth of the age of his mother. After 8 years, he will be one-half of the age of his mother. How old is the mother at present.
4. A man buys a house for Rs. 5 Lakhs and rents it. He puts $12\frac{1}{2}\%$ of each month's rent aside for repairs, pays Rs. 1660 as annual taxes and realizes 10% on his investment thereafter. Find the monthly rent of the house.
5. When a producer allows 36% commission on the retail price of his product, he earns a profit of 8.8%. What would be his profit percent if the commission is reduced by 24%.
6. If 30% of A = 0.25 of B = $\frac{1}{5}$ of C, then find A:B:C.



7. Define communication. Explain the barriers for effective Communication.
8. Highlight the key roles of department of Higher education in India.

PART - B

Answer any Four of the following questions. Each question carries 10 marks.

(4×10=40)

9. a) 8 men working for 9 hours a day complete a piece of work in 20 days. In how many days can 7 men working for 10 hours a day complete the same piece of work.
b) How many minutes does Aditya take to cover a distance of 400m, if he runs at a speed of 20 km/hr.
 10. a) A man takes 3 hours 45 minutes to row a boat 15km downstream of a river and 2 hours 30 minutes to cover a distance of 5 km up stream. Find the speed of the river current in km/hr.
b) Find the number of bricks, each measuring 24cm * 12cm * 8cm, required to construct a wall 24 m long 8 m high and 60 cm thick, if 10% of the wall is filled with mortar.
 11. a) What was the day of the week on 26th January, 1950.
b) How many arrangements can be made out if the letters of the word 'ENGINEERING'.
 12. a) Explain the characteristics of the Learner.
b) Write a short note on factors affecting teaching.
 13. Explain with an example various types of Research.
 14. Write a short note on
 - a) Professional / Technical Education
 - b) AICTE, UGC
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