

III Semester M.C.A. Examination, March/April 2021  
(CBCS Scheme)

COMPUTER SCIENCE

MCA 307 : Softcore - Quantitative Teaching and Research Aptitude

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer **any five** from Part – A.  
2) Answer **any four** from Part – B.

PART – A

Answer **any five** of the following. Each question carries **six** marks : (5×6=30)

1. In a mixture of 60 litres, the ratio of milk and water is 2 : 1. If this ratio is to be 1 : 2, then what quantity of water to be added ?
2. Raju, Kushal and Virat start at same time, same point and in same direction to run around 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 ?
3. Naveen purchased 120 reams of paper at Rs.80 per ream. He spent Rs. 280 on transaction, paid octroi at the rate of 40 paisa per ream and paid Rs. 72 to the servant. If he wants to have a gain of 8%, what must be the selling price per ream ?
4. The captain of a cricket team of 11 members is 26 years old and the wicket keeper is 3 years old. If ages of these two are excluded, the average age of remaining players is one year less than the average age of the whole team. What is the average age of the team ?
5. Rohan took a loan of Rs. 1,500 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 ?
6. Briefly explain the elements involved in the teaching process.
7. List and explain the characteristics of good listener as well as good teacher.
8. Distinguish between Seminar, Conference and Symposium.



## PART – B

Answer **any four** of the following. **Each** question carries **10** marks : **(4×10=40)**

9. a) Give a brief introduction about regulatory framework of higher education in India. 5
- b) Write a note on Online Education System. Will it be a boon or bane ? Justify your answer. 5
10. 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
- b) A man can row 40 km upstream and 55 km downstream in 13 hours. Also, he can row 30 km upstream and 44 km downstream in 10 hours. Find the speed of the man in still water and the speed of the current. 5
11. a) The distance between two cities Chennai and Bengaluru is 330 km. A train starts from Chennai at 8 a.m. and travels towards Bengaluru at 60 kmph. Another train starts from Bengaluru at 9 a.m. and travels towards Chennai at 75 kmph. Find at what time do they meet ? 5
- b) 10 women can complete a work in 7 days and 10 children take 14 days to complete the same work. How many days will 5 women and 14 children take to complete the work ? 5
12. a) One year ago, the ratio of Manoj and Sachin's age was 6 : 7 respectively. Four years hence, this ratio would become 7 : 8. How old is Sachin ? 5
- b) The price of a car is Rs. 3,25,000. It was insured to 85% of its price. The car was damaged completely in an accident and insurance company paid 90% of the insurance. What was the difference between the price of car and amount received ? 5
13. a) A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/h, find the length of the platform ? 5
- b) The top of a 15m high tower makes an angle of elevation of 60 degrees with the bottom of an electric pole and angle of elevation of 30 degrees with the top of the pole. What is the height of the electric pole ? 5
14. 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 color. 5
- b) What was the day of the week on 12<sup>th</sup> January 1863 ? 5