P131/CMP332/ EE/2019
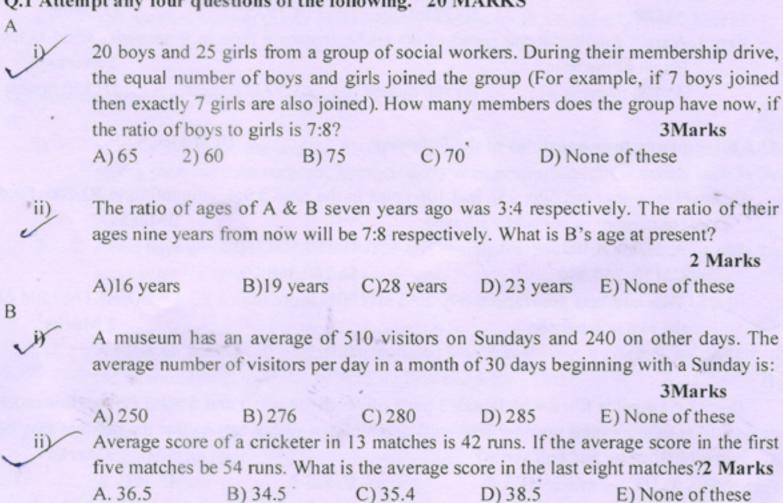
Time: 3hours   **Marks: 80**

Instructions:

1. All Questions are compulsory.
2. Each sub – question carry five marks.
3. Don't select only option A,B,C,D given in the question ,only selection of option doesn't carry mark.
4. Student have to solve the question steps involved in the solution are important and carry marks.
5. Question paper of 80 marks, it will be converted in to your program structure marks.

Q.1 Attempt any four questions of the following.   20 MARKS

A

i)   20 boys and 25 girls from a group of social workers. During their membership drive, the equal number of boys and girls joined the group (For example, if 7 boys joined then exactly 7 girls are also joined). How many members does the group have now, if the ratio of boys to girls is 7:8?   **3Marks**

   A) 65   2) 60   B) 75   C) 70   D) None of these

ii)   The ratio of ages of A & B seven years ago was 3:4 respectively. The ratio of their ages nine years from now will be 7:8 respectively. What is B's age at present?

                                                                                                            2 Marks

   A)16 years   B)19 years   C)28 years   D) 23 years   E) None of these

B

i)   A museum has an average of 510 visitors on Sundays and 240 on other days. The average number of visitors per day in a month of 30 days beginning with a Sunday is:

                                                                                                            3Marks

   A) 250   B) 276   C) 280   D) 285   E) None of these

ii)   Average score of a cricketer in 13 matches is 42 runs. If the average score in the first five matches be 54 runs. What is the average score in the last eight matches?**2 Marks**

   A. 36.5   B) 34.5   C) 35.4   D) 38.5   E) None of these

C

i)   A mixture contains milk and water in the ratio 5 : 1. On adding 5 liters of water, the ratio of milk and water becomes 5 : 2. What is the quantity of milk in the original mixture?   **3 Marks**

   A) 5 liters   B) 25 liters   C) 27.5 Liters   D) 32.5 Liters

ii)   A milkman bought 15 kg of milk and mixed 3 kg of water in it. If the price per kg of the mixture becomes Rs. 22, what is cost price of the milk per kg?   **2Marks**

| | A) 28 | B) 26.40 | C) 24 | D) 22.60 |

D

i) A and B can do a work in 8 days, B and C can do the same work in 12 days. A, B and C together can finish it in 6 days. A and C together will do it in :   **3Mark**

| | A) 4 days | B) 6 days | C) 8 days | D)12 days |

ii) X can do a piece of work in 40 days. He works at it for 8 days and then Y finished it in 16 days. How long will they together take to complete the work?   **2 Mark**

| | A) 13 1/3 days | B) 15 days | C) 20 days | D) 26 days |

E

i) The length of the bridge, which a train 130 metres long and travelling at 45 km/hr can cross in 30 seconds, is: **3Marks**

| | A) 200m | B) 225m | C) 245 | D) 250m |

ii) A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?   **2 Marks**

| | A) 120 meters | B) 180 meters | C) 324 meters | D) 150 meters |

Q.2 Attempt any four questions of the following.   20 MARKS

A

i) A bag contains 50p, 25p and 10p coins in the ratio 5:9:4, amounting to Rs.206. Find the number of coins of each type.   **3Marks**

| | A. 500,900,400 | B. 100,160,360 |
| | C. 150, 250,340 | D. 200,360,160 |

ii) Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is: **2 Marks**

| | A. 2:5 | B. 3:5 | C. 4:5 | D. 6:7 |

B

i) A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?   **3Marks**

| | A. 1/3 | B. 1/4 | C. 1/5 | D. 1/7 |

ii) Find the ratio in which rice at Rs. 7.20 a kg be mixed with rice at Rs. 5.70 a kg to produce a mixture worth Rs. 6.30 a kg.   **2 Marks**

| | A. 1:3 | B. 2:3 | C. 3:4 | D. 4:5 |

C

i) The price of 10 chairs is equal to that of 4 tables. The price of 15 chairs and 2 tables together is Rs. 4000. The total price of 12 chairs and 3 tables is: **3Marks**

| | A. 3500 | B. 3750 | C. 3840 | D. 3900 |

ii) If $a - b = 3$ and $a^2 + b^2 = 29$, find the value of ab.   **2 Marks**

| | A. 10 | B. 12 | C. 15 | D. 18 |

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D

i) There is 60% increase in an amount in 6 years at simple interest. What will be the compound interest of Rs. 12,000 after 3 years at the same rate?**3Marks**

　　A. 2160　　　　B. 3120　　　　C. 3972　　　　D. 6240

ii) A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is:　　**2 Marks**

　　A. 650　　　　B. 690　　　　C. 698　　　　D. 700

E

i) Six bells commence tolling together and toll at intervals of 2, 4, 6, 8 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together?　　**3Marks**

　　A. 4　　　　B. 10　　　　C. 15　　　　D. 16

ii) The greatest number of four digits which is divisible by 15, 25, 40 and 75 is:**2 Marks**

　　A. 9000　　　　B. 9400　　　　C. 9600　　　　D. 9800

Q.3 Attempt any four questions of the following.　　　　**20 MARKS**

A

i) In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?　　**3Marks**

　　A. 30%　　　　B. 70%　　　　C. 100%　　　　D. 250%

ii) Alfred buys an old scooter for Rs. 4700 and spends Rs. 800 on its repairs. If he sells the scooter for Rs. 5800, his gain percent is:　　**2 Marks**

　　A. 4 4/7%　　　　B. 5 5/11%　　　　C. 10%　　　　D. 12%

B

i) A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets?　　**3Marks**

　　A. 45 5/11%　　　　B. 45%　　　　C. 54 6/11%　　　　D. 55%

ii) A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:　　**2 Marks**

　　A. 588 Apples　　　　B. 600 Apples　　　　C. 672 Apples　　　　D. 700 Apples

C

i) How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated?**3Marks**

　　A. 5　　　　B. 10　　　　C. 15　　　　D. 20

ii) In how many ways can the letters of the word 'LEADER' be arranged?**2 Marks**

　　A. 72　　　　B. 144　　　　C. 360　　　　D. 720

D

i) Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?3Marks

A. 1/2   B. 2/5   C. 8/15   D. 9/20

ii) In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?   **2 Marks**

A. 1/3   B. 3/4   C. 7/19   D. 8/21

E

i) Father is aged three times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?   **3Marks**

A. 2 times   B. 2 ½ times   C. 2 ¾ times   D. 3 times

ii) Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?   **2 Marks**

A. 24   B. 27   C. 40   D. None

Q.4 Attempt any four questions of the following.   **20 MARKS**

A

i) If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is: **3Marks**

A. 50km   B. 56 km   C. 70 km   D. 80 km

ii) A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.**2 Marks**

A. 220km   B. 224km   C. 230km   D. 234km

B

i) Pipes A and B can fill a tank in 5 and 6 hours respectively. Pipe C can empty it in 12 hours. If all the three pipes are opened together, then the tank will be filled in:**3Marks**

A. 1 13/17 hours   B. 2 8/11 hours   C. 3 9/17 hours   D. 4 ½ hours

ii) Two pipes A and B can fill a tank in 20 and 30 minutes respectively. If both the pipes are used together, then how long will it take to fill the tank?   **2 Marks**

A. 12 min   B. 15 min   C. 25 min   D. 50 min

C

i) The compound interest on Rs. 30,000 at 7% per annum is Rs. 4347. The period (in years) is: **3Marks**

A. 2 years   B. 2.5 years   C. 3 years   D. 4 years

ii) How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?   **2 Marks**

A. 3.5 years   B. 4 years   C. 4.5 years   D. 5 years

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D

i)   Which of the following statements is not correct?   **3Marks**

   A. $\log_{10} 10 = 1$ B. $\log (2 + 3) = \log (2 \times 3)$

   C. $\log_{10} 1 = 0$ D. $\log (1 + 2 + 3) = \log 1 + \log 2 + \log 3$

ii)   If $\log 27 = 1.431$, then the value of $\log 9$ is: **2 Marks**

   A. 0.934   B. 0.945   C. 0.954   D. 958

E

i)   The angle between the minute hand and the hour hand of a clock when the time is 4.20, is: **3Marks**

   A. 0°   B. 10°   C. 5°   D. 20°

ii)   What was the day of the week on 28th May, 2006?   **2 Marks**

   A. Thursday   B. Friday   C. Saturday   D. Sunday