P131/P133/CMP332/EE/20230122

Time : 3 Hours **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,E 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 you program structure marks.

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1. Solve any **four** sub-questions.

a) i) Find the Highest Common Factor (H.C.F.) of 36 and 84. 3

A) 6 B) 12

C) 4 D) 18

ii) The L.C.M. of $2^3 \times 3^2 \times 5 \times 11$, $2^4 \times 3^4 \times 5^2 \times 7$ and $2^5 \times 3^3 \times 5^3 \times 7^2 \times 11$ is: 2

A) $2^3 \times 3^2 \times 5$ B) $2^5 \times 3^4 \times 5^3$

C) $2^3 \times 3^4 \times 5$ D) $2^5 \times 3^4 \times 5^3 \times 7^2 \times 11$

b) i) If the number 517*324 is completely divisible by 3, Then number in place of * will be: 3

A) 0 B) 1

C) 2 D) 3

ii) The smallest prime number is: 2

A) 0 B) 1

C) 2 D) 3

c) i) A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had: 3

A) 588 apples B) 600 apples

C) 672 apples D) 700 apples

ii) 270 students given examination of English out of which 252 students passed. The pass percentage is: 2

A) 93.33% B) 80%

C) 90% D) 100%

d) i) If a bag is purchased for Rs. 500 and sold for Rs. 400. Find the loss percentage. 3

A) 10% B) 20%

C) 30% D) 50%

ii) Man buys bottle for Rs. 27.50 and sells it for Rs.28.60. Find its profit in Rs. 2

A) 1.50 B) 2.10

C) 3 D) 1.10

e) i) Anand and Deepak started a business investing Rs. 22,500 and Rs.35,000 Respectively. Out of a total profit of Rs. 13,800 then Deepak share is: 3

A) Rs. 5,400 B) Rs. 7,200

C) Rs. 8,400 D) Rs. 9,600

ii) The ratio of three numbers is 3:4:5 and the sum of their squares is 1250. The sum of the numbers is: 2

A) 30 B) 50

C) 60 D) 90

2. Solve any **four** sub-questions.

a) i) What will be the simple interest earned on an amount of Rs. 1,000 for 1 year at the rate of 10% annually? 3

A) Rs. 100 B) Rs. 150

C) Rs. 500 D) Rs. 200

ii) Formula to calculate simple interest is: 2

A) $(P \times R \times T) \div 100$ B) $(R \times T) \div 100$

C) $(P \times T) \div 100$ D) $(P \times 100)$

b) i) At what rate of compound interest per annum, a sum of Rs. 1,200 becomes Rs. 1,348.32 in 2 years? 3

A) 3 B) 5

C) 6 D) 10

ii) Find the Compound Interest (CI) on Rs. 12,600 for 2 years at 10% per annum compounded annually? 2

A) 2,000 B) 2,646

C) 2,846 D) 1,260

c) i) A can finish a work in 18 days and B can do the same work in half the time taken by A. Then, working together, what part of the same work they can finish in a day? 3

A) 1/6 B) 1/9

C) 2/5 D) 2/7

ii) A does a work in 10 days and B does the same work in 15 days. In how many days they together will do the same work? 2

A) 5 days B) 6 days

C) 8 days D) 9 days

d) i) 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? 3

A) 12 min B) 15 min

C) 25 min D) 50 min

ii) Two pipes A and B can fill a tank in 36 hours and 45 hours respectively. If both the pipes are opened simultaneously, how much time will be taken to fill the tank? 2

A) 25 hours B) 36 hours

C) 45 hours D) 20 hours

e) i) A and B together can complete a piece of work in 4 days. If A alone can complete the same work in 12 days, in how many days can B alone complete that work? 3

A) 8 days B) 4 days

C) 12 days D) 6 days

ii) Pipe A can fill a tank in 5 hours, pipe B in 10 hours and pipe C in 30 hours. If all the pipes are open, in how many hours will the tank be filled? 2

A) 2 B) 2.5

C) 3 D) 3.5

3. Solve any **four** sub-questions.

a) i) A train 300 m long is running at a speed of 54 km/hr. In what time will it pass a bridge 150 m long? 3

A) 32 B) 30

C) 51 D) 16

ii) If 15 toys cost Rs. 234, what is cost of 35 toys? 2

A) 250 B) 546

C) 575 D) 600

b) i) A train running at the speed of 56 km/hr. crosses a pole in 18 seconds. What is the length of the train? 3

A) 200 m B) 250 m

C) 140 m D) 280 m

ii) Car moves at the speed of 90 km/hr. What is the speed of the car in meter per second (m/s)? 2

A) 25 m/s B) 20 m/s

C) 30 m/s D) 45 m/s

c) i) Time is taken by two trains running in opposite directions to cross a man standing on the platform in 28 seconds and 18 seconds respectively. It took 26 seconds for the trains to cross each other. What is the ratio of their speeds? 3

A) 2 :3 B) 3 : 2

C) 4 : 1 D) 3 : 1

ii) In a throw of a coin, find the probability of getting a head. 2

A) 1/2 B) 1/3

C) 1/4 D) 1/6

d) i) Person can swim in water with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, what will be the time taken by the person to go 68 km downstream? 3

A) 2.5 hour B) 3 hour

C) 4 hour D) 3.5 hour

ii) In a simultaneous throw of two coins, the probability of getting atleast one head is: 2

A) 1/2 B) 1/3

C) 3/4 D) 1/6

e) i) In one hour, a boat goes 13 km/hr in the direction of the stream and 7 km/hr. against the direction of the stream. What will be the speed of the boat in still water? 3

A) 2 km/hr B) 4 km/hr

C) 6 km/hr D) 10 km/hr

ii) Find the number of permutations of the letters of the word ALLAHABAD. 2

A) 7560 B) 8000

C) 5050 D) 6800

4. Solve any **four** sub-questions.

a) i) The sum of the ages of a daughter and mother is 56 years; after four years the age of the mother will be three times that of the daughter. What is the age of the daughter and the mother, respectively? 3

A) 12 years, 41 years B) 12 years, 30 years

C) 11 years, 34 years D) 12 years, 44 years

ii) Rajeev's age after 15 years will be 5 times his age 5 years back. What is the present age of Rajeev? 2

A) 10 years B) 15 years

C) 18 years D) 20 years

b) i) Father is twice as old as his daughter. If 20 years ago, the age of the father was 10 times the age of the daughter, what is the present age of the father? 3

A) 32 B) 45

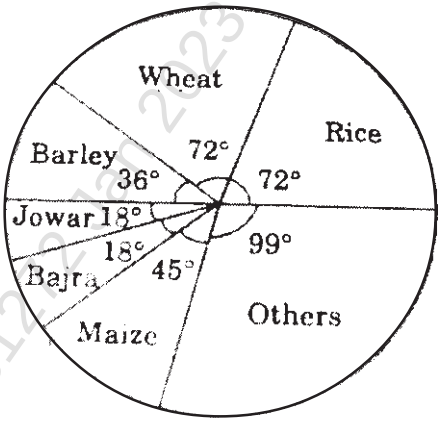
C) 33 D) 55

ii) In how many ways can the letters of the word "APPLE" be arranged? 2

A) 720 B) 120

C) 60 D) 180

c) The pie chart provided below gives distribution of land (in a village) under various food crops. Study the pie chart carefully and answer the following questions.



i) Which combination of three crops contribute to 50% of the total area under the food Crops? **(Refer above Pie chart)** 3

A) Wheat, Barley, Jowar B) Rice, Wheat, Jowar

C) Rice, Wheat, Barley D) Bajra, Maize, Rice

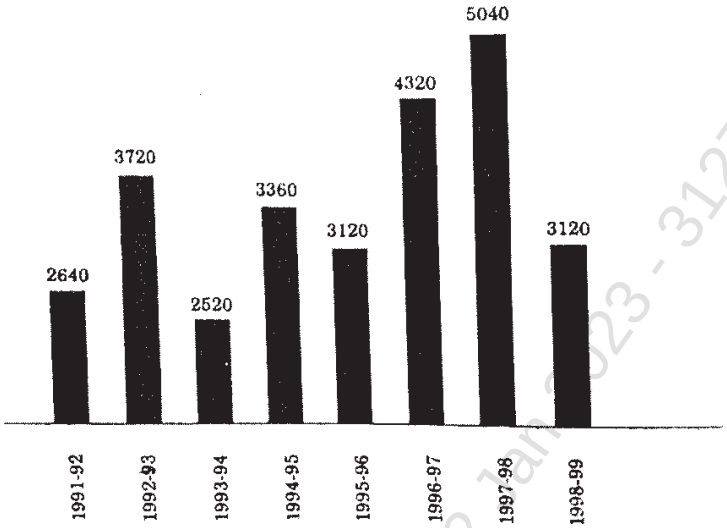
ii) If the total area under jowar was 1.5 million acres, then what was the area (in million acres) under rice? **(Refer above Pie chart)** 2

A) 6 B) 7.5

C) 9 D) 4.5

d) The bar graph given below shows the foreign exchange reserves of a country (in million US$) from 1991 - 92 to 1998 - 99. Answer the following questions based on this graph.

FOREIGN EXCHANGE RESERVES OF A COUNTRY
(in million US $)



i) What was the percentage increase in the foreign exchange reserves in 1997-98 Over 1993-94? **(Refer above bar graph)** 3

A) 100% B) 150%

C) 90% D) 50 %

ii) The foreign exchange reserves in 1997-98 was how many times that in 1994-95? **(Refer above bar graph)** 2

A) 0.7 B) 1.2

C) 1.4 D) 1.5

e) i) Bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is probability that none of the balls drawn is blue? 3

A) 10/21 B) 11/21

C) 2/7 D) 5/7

ii) One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is a face card? 2

A) 1/13 B) 4/13

C) 1/4 D) 9/52

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