

Code No. : 20078 E Sub. Code : SNMA 3 A/
ANMA 31

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Third Semester

Mathematics

Non Major Elective — MATHEMATICS FOR
COMPETITIVE EXAMINATIONS – I

(For those who joined in July 2017–2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. $100 + 50 \times 2 =$ _____
- (a) 75 (b) 150
(c) 200 (d) 300

7. Gain = _____
- (a) selling price – cost price
(b) cost price – selling price
(c) selling price + cost price
(d) selling price × cost price
8. I gain 70 paise on Rs. 70. My gain percent is _____
- (a) 0.1% (b) 10%
(c) 7% (d) 1%
9. If a number, when divided by 4, is reduced by 21, the number is _____
- (a) 18 (b) 20
(c) 28 (d) 38
10. The sum of first 10 natural number is _____
- (a) 50 (b) 45
(c) 40 (d) 55

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) If $2x + 3y = 34$ and $\frac{x+y}{y} = \frac{13}{8}$, then find the value of $5y + 7x$.
- Or
- (b) A batsman makes a score of 87 runs in the 17th inning and thus increases his average by 3. Find his average after 17th inning.

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2. The average of all prime number between 30 and 50 is _____
- (a) 39 (b) 39.5
(c) 39.8 (d) 39.2
3. If $\frac{x}{y} = \frac{3}{5}$ then $x =$ _____
- (a) 3 (b) 5
(c) 0.6 (d) 3.5
4. If $\frac{a}{b} = \frac{c}{d}$ then $\frac{a+b}{a-d} =$ _____
- (a) $\frac{c+a}{d+b}$ (b) $\frac{c-d}{c+d}$
(c) $\frac{a-b}{a+d}$ (d) $\frac{c+d}{c-d}$
5. A partner who manages the business is known as _____
- (a) sleeping partner (b) working partner
(c) (a) or (b) (d) (a) and (b)
6. The fraction of 56% is _____
- (a) $\frac{25}{14}$ (b) $\frac{14}{25}$
(c) $\frac{7}{13}$ (d) $\frac{13}{7}$

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12. (a) Divide Rs. 1162 among A, B, C in the ratio 35 : 28 : 20, then find the share of A, B and C.
- Or
- (b) The ratio of three number is 3 : 4 : 7 and their product is 18144. Find those three numbers?
13. (a) A, B and C started a business by investing Rs. 1,20,000, Rs. 1,35,000 and Rs. 1,50,000 respectively. Find the share of each, out of an annual profit of Rs. 56,700.
- Or
- (b) Evaluate :
- $16\frac{2}{3}\%$ of 600 gm – $33\frac{1}{3}\%$ of 180 gm.
14. (a) A man buys an article for Rs. 27.50 and sells it for Rs. 28.60. Find his gain percent.
- Or
- (b) If loss of a product is $\frac{1}{3}$ of selling price then find the loss percentage.

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[P.T.O.]



15. (a) The difference of two numbers is 11 and one-fifth of their sum is 9. Find the numbers.

Or

- (b) If three numbers are added in pairs, the sums equal 10, 19 and 21. Find the numbers.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) If two coconut and three mango cost is Rs. 86 and four coconut and a mango cost is Rs. 112. Find the cost of a coconut and that of a mango.

Or

- (b) If the average marks of three batches of 55, 60 and 45 students respectively is 50, 55 and 60 then find the average marks of all the students.

17. (a) A bag contains 50 P, 25 P and 10 P coins in the ratio 5 : 9 : 4, amounting to Rs. 206. Find the number of coins of each type.

Or

- (b) If 0.4 of a number is equal to 0.06 of another number. Find the ratio of their numbers.

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18. (a) If 4 (A's capital) = 6 (B's capital) = 10 (C's capital), then out of a profit of Rs. 4650, C will receive how much profit?

Or

- (b) In an examination, 35% of total students failed in Hindi, 45% failed in English and 20% in both. Find the percentage of those who passed in both the subjects?

19. (a) A Dairyman pays Rs. 6.40 per litre of milk. He adds water and sells the mixture at Rs. 8 per litre, thereby making 37.5% profit. Find the proportion of water to milk received by the customer.

Or

- (b) 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%?

20. (a) A number consists of two digits. The sum of the digit is 9. If 63 is subtracted from the number, its digits are interchanged. Find the number.

Or

- (b) The average of four consecutive even numbers is 27. Find the largest of these numbers.

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