C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),

MELVISHARAM - 632 509.

SEMESTER EXAMINATIONS, NOVEMBER - 2018

B.Sc., MATHEMATICS   **SEMESTER III**

U15SMA301 / U14SMA301 – MATHEMATICS FOR COMPETITIVE EXAMINATIONS (SBS - I)

Time: Three Hours   Maximum: 60 Marks

SECTION - A (10 X 1 = 10 Marks)

Answer **ALL** Questions.

1. If $x : y = 3:4$ then find $(4x+5y):(5x-2y)$.

2. Write the rule for Triplicate ratio?

3. Express 0.08%.

4. Write the formula for Gain%.

5. A cyclist covers a distance of 750m in 2 mins30 sec. What is the speed in km/hr of the Cyclist?

6. A man can do a piece of work in 5 days, but with the help of his son, he can do it is 3 days. In what time can the son do it alone?

7. Define Stock capital.

8. Write the amount when the interest is compounded half yearly.

9. Write the formula for Geometric mean.

10. Define Range.

SECTION - B (5 X 4 = 20 Marks)

Answer **ALL** Questions.

11. a) If $\dfrac{a}{3} = \dfrac{b}{4} = \dfrac{c}{7}$ then $\dfrac{a+b+c}{c}$ is equal to ____.

(Or)

b) Find the ratio of $4^{3.5} : 2^5$.

12. a) A man bought toffees at 3 for a rupee. How many for a rupee must he sell to gain 50%?

(Or)

b) If the cost price is 96% of the selling price, then what is the profit percent?

13. a) A, B and C can complete a piece of work in 24,6 and 12 days. Working together they will complete the same work in ____ days.

(Or)

b) How many minutes does Aditya take to cover a distance of 400miles, if he runs at a speed of 20 km/hr?

14. a) Find Compound interest on Rs.8000 at 15% per annum for 2 years 4 months Compounded annually.

(Or)

b) What annual installment will discharge a debt of Rs.1092 due in 3 years at 12% Simple interest?

15. a) Find the Range and Coefficient of the Range from the following 27,30,35,36,38,40,43.

(Or)

b) Find the Median.

X	13	14	15	16	17	18	19	20	21	22	23	24	25
Y	37	162	343	390	256	433	161	355	65	85	49	46	40

SECTION - C (3 X10 = 30 Marks)

Answer **ANY THREE** Questions.

16. Find i) the fourth proportional to 4,9,12

    ii) the third proportional to 16 and 36

    iii) the mean proportion between 0.08 and 0.18.

17. An Article is sold at a certain price. By selling it at $\frac{2}{3}$ of that price one loses 10%. Find the Gain percent at original price.

18. Mac travels from A to B a distance of 250 miles in $5\frac{1}{2}$ hours. He returns to A in 4 hrs 30 mins. His average speed is?

19. What annual payment will discharge a debt of Rs.7620 due in 3 years at 16 $\frac{2}{3}$ % per annum compound interest?

20. Calculate Mean, Median and Mode for the data given below.

Daily earnings (Rs)	50-53	53-56	56-59	59-62	62-65	65-68	68-71	71-74	74-77
No of persons	3	8	14	30	36	28	16	10	5

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