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B.M.S. COLLEGE FOR WOMEN, AUTONOMOUS

BENGALURU – 560004

SEMESTER END EXAMINATION – SEPTEMBER 2023

Open Elective –IV Semester

QUANTITATIVE MATHEMATICS

(NEP Scheme 2021-22 Onwards)

Course Code: MAT4OE04

Duration: 2 ½ Hours

QP Code: 4204

Max marks: 60

Instructions: Answer all the sections.

SECTION-A

I. Answer any SIX questions. Each question carries TWO marks.

(6X2=12)

1. What is the unit digit in the product $(3547) \times 153 \times (251) \times 472$?
2. Find the HCF of 84 and 90
3. Evaluate $2.7561 + 0.7562$
4. Solve $x + y = 7$ and $x - y = 3$
5. If $2x + 3y = 2$ and $y = -5$ find x
6. Solve $x^2 + 7x + 12 = 0$
7. If 40% of $x = 240$ then find the value of 'x'
8. How many times in a day, are the hands of a clock at right angle?
9. How many days are there in 'x' weeks 'x' days?

SECTION-B

II. Answer any SIX questions. Each question carries EIGHT marks.

(6X8=48)

1. A) If $\frac{x}{y} = \frac{1}{2}$ then find the value of $\frac{x^2 + y^2}{x^2 - y^2}$

B) Simplify $\left(\sqrt{3} - \frac{1}{\sqrt{3}}\right)^2$

2. A) If $3^{x-y} = 27$ & $3^{x+y} = 243$ then find the value of 'x'

B) Find the value of $(7.5 \times 7.5 + 37.5 + 2.5 \times 2.5)$

3. A) Arrange the fractions $\frac{28}{15}, \frac{65}{63}, \frac{35}{23}, \frac{14}{15}$ and $\frac{78}{79}$ in ascending order.

B) Solve $3^{2x+1} - 3^x = 3^{x+3} - 3^2$

4. A) The sum of two numbers is 50 and their difference is 16. Find the numbers.
B) Solve the equation $x + 2y = 3$ & $2x - 4y = 2$
5. A) The cost of 5kg sugar and 7kg rice is Rs.153 and the cost of 7kg of sugar and 5kg of rice is Rs.147. Find the cost of 6kg sugar and 10 kg of rice.
B) Solve $\frac{(t-1)}{(t+1)} = \frac{5}{7}$ and hence find the value of $t^2 + 5t + 10$
6. A) The age of a person A was 7 times that of B 5years ago. At present the age of A is 4 times that of B. What are present ages of A and B?
B) The sum of square of two consecutive integers equals to 365. Find the difference between them.
7. A) A and B can do a work in 15 days, B and C in 20 days, C and A in 12 days, in how many days can they complete the work if they work together?
B) Evaluate $23\% \text{ of } 8040 + 42\% \text{ of } 545 = x\% \text{ of } 3000$, find the value of 'x'
8. A) A Cyclist covers a distance of 750m in 2minutes 30 seconds what is the speed in km/hr. of the cyclist
B) The salary of Rashmi is increased from RS. 3500/- TO Rs. 4025/- find the increase percent
9. A) If 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it?
B) Find the angle between the hour and the minutes hand of a clock when the time is 3.25.
