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B.M.S COLLEGE FOR WOMEN, AUTONOMOUS

BENGALURU – 560004

SEMESTER END EXAMINATION – MARCH/APRIL- 2023

OPEN ELECTIVE – III Semester

QUANTITATIVE MATHEMATICS AND ORDINARY DIFFERENTIAL EQUATION

(NEP Scheme 2021-22 onwards)

Course Code: MAT3OE03

Duration: 2 ½ Hours

QP Code: 3203

Max marks: 60

Instructions: Answer all the sections.

I. Answer any SIX Questions- Each question carries TWO marks. (6X2=12)

1. Find the unit digit in the product of $648 \times 597 \times 314 \times 676$
2. Simplify: $521 + 52.1 + 5.21 + 0.521 + 0.0521$
3. Simplify: 14.21×5.2
4. The HCF of two number is 11 and their LCM is 693. If one of the numbers is 77 find the other.
5. Solve: $2x^2 - 3x - 5 = 0$
6. Find x if $\frac{x}{5} - \frac{x}{6} = 4$
7. When the time is 4o'clock, what will be the angle between both the hands of the clock?
8. 40 % of x is 50. Find x .
9. A man went to a place at 60kmph and returned at 40kmph. Find his average speed.

II. Answer any SIX Questions. Each question carries EIGHT marks. (6X8=48)

1. a. Find the sum of all two digits number divisible by 5. (5+3)
b. Find the HCF of 36 and 84.
2. a. Arrange the fractions $\frac{17}{18}, \frac{31}{36}, \frac{43}{45}, \frac{59}{60}$ in the ascending order. (5+3)
b. Simplify: $\left(\frac{8}{125}\right)^{-\frac{4}{3}}$
3. a. If $3^{(x+y)} = 27$ and $3^{(x-y)} = 81$, find the value of x and . (5+3)
b. A man spends 65% of his salary and saves Rs. 525 per month. Find his monthly salary.
4. a. A man is 24 years older than his son. In two years, his age will be twice the age of his son. Find the present age of the son. (5+3)
b. Solve: $\frac{7-4x}{3} = y$; $2x + 3y + 1 = 0$

5. a. The Length of a hall is 3mts more than its breadth. If the area of the hall is 238 sq. mts, calculate its length and breadth. **(5+3)**
b. The sum of a number and its reciprocal is $\frac{13}{6}$. Find the number.
6. a. 7 chairs and 4 tables for a classroom cost Rs. 7000 while 5 chairs and 3 tables cost Rs. 5080. Find the cost of each chair and that of each table. **(5+3)**
b. Solve: $3(4x + 1) - (4x - 1) = 0$
7. a. A cyclist covers a distance of 750m in 2 min 30 sec. what is the speed in km/hr of the cyclist? **(5+3)**
b. Evaluate: 28% of 450+ 45% of 280.
8. a. A does a work in 10 days and B does the same work in 15 days. In how many days they together will the same work? **(5+3)**
b. $\frac{1}{2}$ is what percent of $\frac{1}{3}$?
9. a. The average weight of 16 boys in a class is 50.25kg. The average weight of the remaining 8 boys is 45.15kg. What is the average weight of all the boys in the class?
b. How many times in a day, hands of a clock are straight? **(5+3)**
