

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025

(FYUGP)

(Regular/Supplementary/Improvement)

CC24UMAT1FM105(2) - MATHEMATICS FOR COMPETITIVE EXAMINATION - PART - 1

(Mathematics - MDC)

(2024 Admission onwards)

Time: 1.5 Hours

Maximum : 50 Marks

Credit: 3

Section AAnswer *all* questions. Each question carries 1 mark.

1. What is the wrong term in the series 5, 8, 16, 26, 50, 98, 194 ? [Level:3] [CO1]
 (a) 5 (b) 16 (c) 194 (d) 8
2. If a ten digit number $1330x558y2$ is divisible by 88, then the value of $(x+y)$ is [Level:3] [CO1]
 (a) 7 (b) 9 (c) 6 (d) 8
3. $27 \times 1.\bar{2} \times 5.526\bar{2} \times 0.\bar{6} = ?$ [Level:3] [CO1]
 (a) $121.\bar{5}7$ (b) $121.\bar{7}5$ (c) $121.\bar{7}\bar{5}$ (d) None of these
4. What should be in the place of * in $94*2357$, so that the number is divisible by 11? [Level:3] [CO1]
 (a) 1 (b) 7 (c) 8 (d) 3
5. $\frac{8}{1}3 \div \frac{1}{0}56 = ?$ [Level:3] [CO1]
 (a) $\frac{5}{6}$ (b) $\frac{2}{3}$ (c) $\frac{10}{13}$ (d) $\frac{11}{13}$
6. Howmany $\frac{1}{8}$ s are there in $37\frac{1}{2}$? [Level:3] [CO1]
 (a) 400 (b) 300 (c) 500 (d) 100
7. $\frac{19999}{21111} = ?$ [Level:3] [CO1]
 (a) 0.947 (b) 0.749 (c) 0.497 (d) 0.794
8. What is the next term in the series 3, 7, 17, 31, ...? [Level:3] [CO1]
 (a) 51 (b) 53 (c) 57 (d) 61
9. What is the missing tem in the series 0, 6, 24, 60,, 210 ? [Level:3] [CO1]
 (a) 120 (b) 130 (c) 220 (d) 224
10. Find the sum of face values of 9 and 6 in 907364 [Level:3] [CO1]
 (a) 15 (b) 20 (c) 9 (d) 18

11. How many numbers are there between 99 and 1000 such that the digit 8 occupies the unit's place? [Level:3] [CO1]
 (a) 64 (b) 80 (c) 90 (d) 104
12. What is the number which on subtraction from the number 5029 is completely divisible by 17? [Level:3] [CO1]
 (a) 14 (b) 15 (c) 3 (d) 12
13. Between $\frac{4}{7}$ and $\frac{3}{8}$, which fraction is bigger? [Level:3] [CO1]
 (a) $\frac{4}{7}$ (b) $\frac{3}{8}$
 (c) Can not be determined (d) Both are same
14. What is the HCF of $\frac{36}{51}$ and $3\frac{9}{17}$? [Level:3] [CO2]
 (a) $\frac{13}{15}$ (b) $\frac{14}{15}$ (c) $\frac{12}{17}$ (d) $\frac{17}{19}$
15. Simplify $5 + 2 \times 3 \div (3 \times 2) \times 3$ [Level:3] [CO2]
 (a) 8 (b) 17 (c) 18 (d) 7
16. Find the least 6-digit number which is a perfect square? [Level:3] [CO2]
 (a) 100489 (b) 100089 (c) 100480 (d) 100049
17. $486 \div ? \times 7392 \div 66 = 1008$ [Level:3] [CO2]
 (a) 54 (b) 51 (c) 55 (d) 52
18. $65 \times 3 \div 13 + 67 - x^2 = 81 \div 9 \times 2$. Find x. [Level:3] [CO2]
 (a) 9 (b) 14 (c) 8 (d) 12
19. What is the Square root of 149.597361? [Level:3] [CO2]
 (a) 12.123 (b) 12.231 (c) 11.231 (d) 11.111
20. What is the HCF of 26 and 455? [Level:3] [CO2]
 (a) 11 (b) 12 (c) 8 (d) 13
21. Find the LCM of 15, 24, 32 and 45. [Level:3] [CO2]
 (a) 1440 (b) 1400 (c) 1040 (d) 1004
22. What is the LCM of 0.6, 9.6 and 0.12? [Level:3] [CO2]
 (a) 8.6 (b) 5.6 (c) 9.6 (d) 11.6
23. $\sqrt{15 \times 163 \div 5 - 89} = ?$ [Level:3] [CO2]
 (a) 10 (b) 15 (c) 20 (d) 25
24. If the HCF of two numbers is 8, then which of the following can never be their LCM? [Level:3] [CO2]
 (a) 24 (b) 48 (c) 56 (d) 60

25. What is the cube root of 17576? [Level:3] [CO2]
 (a) 26 (b) 24 (c) 22 (d) 28
26. The monthly income of a person is 8000 rupees. If his income is increased by 20%, then what will be his new monthly income? [Level:3] [CO3]
 (a) 7200 (b) 8400 (c) 8800 (d) 9600
27. The present age of Karan is 5 times the age of Shivam. After 10 yr, Karan will be three times as old as Shivam. What are the present age of karan and Shivam? [Level:3] [CO3]
 (a) 10 yr, 50 yr (b) 50 yr, 10 yr (c) 25 yr, 5 yr (d) 5 yr, 25 yr
28. The average of the square of first seven natural number is [Level:3] [CO3]
 (a) 15 (b) 20 (c) 25 (d) 26
29. Find the greater ratio between 2 : 3 and 4 : 5. [Level:3] [CO3]
 (a) 2 : 3 (b) 4 : 5 (c) Both are same (d) None of these
30. What is the mean proportional between 4 and 25? [Level:3] [CO3]
 (a) 10 (b) 12 (c) 15 (d) 18
31. What is the average of 3, 4, ..., 52, 53? [Level:3] [CO3]
 (a) 38 (b) 28 (c) 27 (d) 26
32. Convert $\frac{3}{8}$ into percent [Level:3] [CO3]
 (a) 22.5 (b) 25 (c) 37.5 (d) 38
33. Find the mean proportional between 9 and 64. [Level:3] [CO3]
 (a) 25 (b) 24 (c) 23 (d) 22
34. Find the compound ratio of 2 : 7, 5 : 3 and 4 : 7. [Level:3] [CO3]
 (a) 147 : 40 (b) 40 : 147 (c) 147 : 30 (d) 30 : 147
35. Mukesh told his grand daughter Sailee that 5 years ago, he was seven times as old as she was After 15yr, he will be thrice old as she will be. What is the sum of their present ages? [Level:3] [CO3]
 (a) 45 (b) 95 (c) 90 (d) 85
36. If $4a = 5b$ and $7b = 9c$, then $a : b : c$ is [Level:3] [CO3]
 (a) 45 : 36 : 28 (b) 28 : 36 : 45 (c) 28 : 32 : 44 (d) 44 : 32 : 28
37. A sum becomes its double in 10 yr. Find the annual rate of simple interest. [Level:3] [CO4]
 (a) 10% (b) 5% (c) 8% (d) 2%

38. The average age of a husband and wife was 23 yr, at the time of their marriage. After five years they have a one year old child. The average age of the family now is [Level:3] [CO3]
 (a) 19 yr (b) 29.3 yr (c) 23 yr (d) 28.5 yr
39. If A's salary is 25% more than that of B, then how much percent of B's salary less than that of A? [Level:3] [CO3]
 (a) 25 (b) 18 (c) 20 (d) 15
40. The sum which amounts to 364.80 rupees in 8 yr at 3.5% simple interest per annum is [Level:3] [CO4]
 (a) 270 (b) 275 (c) 280 (d) 285
41. What will be a single equivalent discount for successive discounts of 10% and 5% on marked price of an article? [Level:3] [CO4]
 (a) 11.5 (b) 14.5 (c) 18.5 (d) 13
42. A sum of 2668 rupees amounts to 4669 rupees in 5 yr at the rate of simple interest. Find the rate per cent. [Level:3] [CO4]
 (a) 14.9 (b) 15 (c) 15.2 (d) 16
43. Find the CP when SP is 40 rupees and gain is 15%. [Level:3] [CO4]
 (a) 29.50 (b) 32.28 (c) 34.78 (d) 35.12
44. A man sold two radios for 2000 rupees each. On one he gains 16% and on the other he losses 16%. Find his gain or loss per cent in the whole transaction. [Level:3] [CO4]
 (a) 2.56 (b) 25.6 (c) 24.6 (d) 2.46
45. Find the compound interest on 2000 rupees at 15% per annum for 2 yr 4 months, compounded annually. [Level:3] [CO4]
 (a) 700 (b) 777 (c) 777.25 (d) 872.50
46. Find the mean proportional between 9 and 64. [Level:3] [CO4]
 (a) 25 (b) 24 (c) 23 (d) 22
47. What is the third proportional to 9 and 45? [Level:3] [CO4]
 (a) 405 (b) 225 (c) 5 (d) 81
48. Ruchi invested 1600 rupees at the rate of compound interest for 2 yr. She got 1764 rupees after the specified period. Find the rate of interest. [Level:3] [CO4]
 (a) 4 (b) 5 (c) 6 (d) 7
49. Find the fourth proportional to 4, 16 and 7. [Level:3] [CO4]
 (a) 28 (b) 29 (c) 22 (d) 25
50. On a 20% discount sale, an article costs 596. What was the original price of the article? [Level:3] [CO4]
 (a) 45 : 56 (b) 8 : 11 (c) 47 : 56 (d) 3 : 4

(50 × 1 = 50 Marks)
