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**Question Paper Code: 5400A**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fourth Semester

Civil Engineering

15UGS431 - REASONING AND QUANTITATIVE APTITUDE

(Common to ALL branches)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer Any 50 Questions

PART A - (50 x 2 = 100 Marks)

- What is the unit digit in the product  $(62523 - 38122)$  ?  
(a) 0                      (b) 2                      (c) 8                      (d) 6
- How many numbers from 22 to 90 are exactly divisible by 11?  
(a) 6                      (b) 7                      (c) 8                      (d) 9
- What least number must be added to 3000 to obtain a number exactly divisible by 19?  
(a) 2                      (b) 8                      (c) 11                      (d) 17
- The sum of three prime numbers is 100. If one of them exceeds another by 36 then one of the numbers is  
(a) 7                      (b) 29                      (c) 41                      (d) 67
- Find unit digit in  $(515)^{31} + (515)^{90}$ :  
(a) 0                      (b) 1                      (c) 5                      (d) 4
- The HCF of two prime numbers is  
(a) Their product      (b) their sum              (c) one                      (d) zero
- Find the greatest number, which on dividing 1657 and 2037 leaves remainders 6 and 5 respectively  
(a) 127                      (b) 132                      (c) 114                      (d) 108

8. The LCM of two prime numbers is  
(a) Their product (b) their sum (c) one (d) zero
9. If a clock strikes once at 1 O'clock, twice at 2 O'clock and so on, how many times will it strike in a day  
(a) 78 (b) 156 (c) 144 (d) None of these
10. Find the largest number of 4-digits divisible by 12, 15 and 18.  
(a) 9900 (b) 9750 (c) 9450 (d) 9000
11. The average of 13 results is 50. If the average of first 7 results is 52 and that of last 7 results is 49. Find the 7<sup>th</sup> result?  
(a) 50 (b) 52 (c) 56 (d) 57
12. Find the number of 3 digit numbers, which are divisible by 9  
(a) 99 (b) 100 (c) 101 (d) 98
13. The average age of a class of 32 students is 16 yrs. if the teacher's age is also included, the average increases by one year. Find the age of the teacher  
(a) 49 (b) 48 (c) 47 (d) 50
14. The sum of all even natural numbers between 1 and 31 is  
(a) 16 (b) 128 (c) 240 (d) 512
15. A man's average daily expenditure is Rs.12 during March, Rs.14 during April and Rs. 17 during May. Find the Average daily expenditure for the three months.  
(a) 13.35 (b) 14.22 (c) 14.33 (d) 13.33
16. Find the average of first ten multiples of 3?  
(a) 13 (b) 15 (c) 18 (d) 16.5
17. In a cricket match, Rahul scored a century with 13 boundaries and 3 sixes. What percentage of his runs did he make by running between the wickets?  
(a) 70% (b) 50% (c) 35% (d) 30%
18. Number decreased by 20% gives 480. The number is  
(a) 500 (b) 600 (c) 550 (d) None of these
19. If the average of seven numbers is 35. If one is included. The average becomes 40. The included number is  
(a) 70 (b) 75 (c) 65 (d) 80

20. Find the average of all numbers between 5 and 49 which are divisible by 5.  
(a) 20                      (b) 25                      (c) 30                      (d) 35
21. If the length of the rectangle is decreased by 20% and breadth is increased by 25% then change of the area is  
(a) 5%                      (b) 20 %                      (c) 0%                      (d) 10%
22. A year ago, the father was 8 times as old as his son. Now his age is the square of his son's age. Find their present ages.  
(a) 7 years, 49 years (b) 8 years, 64 years (c) 6 years, 36 years (d) 5 years, 25 years
23. 40% of a number is 80. What is 30% of one – fourth of the number?  
(a) 60                      (b) 30                      (c) 15                      (d) 10
24. The sum of ages of Sarvesh and his father is 46 years. 3 years back father's age was 4 times more than Sarvesh's age. Find present age of Sarvesh.  
(a) 11 years                      (b) 8 years                      (c) 12 years                      (d) 16 years
25. If 20% of a certain number is 80, then what is 30% of that number is  
(a) 100                      (b) 120                      (c) 150                      (d) 140
26. A man buys a cycle for Rs.1400 and sells it at a loss of 15%. What is the selling price of the cycle?  
(a) Rs. 1090                      (b) Rs. 1160                      (c) Rs. 1190                      (d) Rs. 1202
27. After 5 years, age of Neelam would be 28 years. What was her age 8 years ago?  
(a) 15                      (b) 20                      (c) 25                      (d) 30
28. If the cost price of 8 articles is same as the selling price of 10 articles. Find the gain or loss percentage  
(a) 20% gain                      (b) 20% loss                      (c) 30% gain                      (d) 30% loss
29. A sum of Rs. 7500 at compound interest at 4% per annum for 2 years amount to  
(a) Rs. 7800                      (b) Rs. 8100                      (c) Rs. 8112                      (d) Rs. 8082
30. The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of his son. After six years, son's age will be  
(a) 52 years                      (b) 20 years                      (c) 32 years                      (d) 40 years
31. The cost price of 6 pens is equal to the selling price of 4 pens. Find the profit percent  
(a) 25%                      (b) 60%                      (c) 50%                      (d) 80%

32. Every year an amount increases by  $\frac{1}{8}^{\text{th}}$  of itself. How much will it be after two years if its present value Rs.64000.
- (a) Rs. 64000      (b) Rs. 75000      (c) Rs. 81000      (d) Rs. 80000
33. A sum of money becomes Rs. 2200 after three years and Rs. 4400 after six years on compound interest. The sum is
- (a) Rs. 1400      (b) Rs. 1100      (c) Rs. 1000      (d) Rs.1200
34. By selling a book for 270, 20% profit was earned. What is the cost price of the book?
- (a) 216      (b) 226      (c) 254      (d) 225
35. If  $x : y = 9 : 4$  then  $(7x-3y) : (7x +3y) = ?$
- (a) 51 : 76      (b) 6 : 13      (c) 51 : 75      (d) None of these
36. A sum of money fetched an interest of Rs. 3840 in 4 years at an interest rate of 8%. Find the sum
- (a) Rs. 8000      (b) Rs. 12000      (c) Rs. 16000      (d) Rs. 19200
37. If a dozen mirrors are fallen down. The ratio between broken and unbroken mirrors is
- (a) 2 : 3      (b) 3 : 4      (c) 5 : 7      (d) 5 : 4
38. At what rate per annum a sum of Rs. 2400/- will become Rs. 3600/- in 5 years
- (a) 10%      (b) 15%      (c) 20%      (d) 12%
39. The ratio of boys to girls in a class 5: 3. The class has 16 more boys than girls. How many girls are there in the class?
- (a) 16      (b) 6      (c) 24      (d) 64
40. Find the principle, interest on Rs.900/- at 6% p.a. for 3 years?
- (a) Rs.5000      (b) Rs.4500      (c) Rs.3500      (d) Rs.2200
41. A man walking at the rate of 5 km/hr crosses a bridge in 15 minutes. The length of the bridge (in meters) is
- (a) 600      (b) 750      (c) 1000      (d) 1250
42. The ratio of two numbers is 3:4 and their sum is 28. The greater of the two numbers is?
- (a) 8      (b) 12      (c) 14      (d) 16
43. A motorist travels for 6 hours, the first half at 60 kmph and rest 48 kmph. Find the distance traveled by him
- (a) 324 km      (b) 320 km      (c) 300 km      (d) 340 km

44. If  $a:b=1:2$ ,  $b:c=3:4$  and  $c:d=2:3$  find  $a:b:c:d$ ?
- (a) 3:6:8:24      (b) 6:12:16:24      (c) 6:18:24:16      (d) 3:6:2:3
45. Ram, Shyam and Mohan can do a piece of work in 12, 15 and 20 days respectively. How long will they take to finish it together.
- (a) 10 days      (b) 14 days      (c) 12 days      (d) 5 days
46. A person crosses a 600 m long street in 5 minutes. What is his speed in km/hr?
- (a) 3.6      (b) 7.2      (c) 8.4      (d) 10
47. Two pipes P and Q can fill a cistern in 12 and 15 minutes respectively. Both are opened together, but at the end of 3 minutes the first is turned off. How much longer will the cistern take to fill?
- (a)  $9\frac{1}{4}$  min      (b)  $7\frac{1}{4}$  min      (c)  $11\frac{1}{4}$  min      (d)  $8\frac{1}{2}$  min
48. A man starts at 3 pm with the speed of 50 Kmph. Another man follows him at 4 pm with the speed of 75 Kmph. When will they meet?
- (a) 5 pm      (b) 6 pm      (c) 7 pm      (d) 6.30 pm
49. 320m long train is running at 72 Kmph. how much time it will take to cross a platform of 180m long?
- (a) 20 sec      (b) 25 sec      (c) 30 sec      (d) 27 sec
50. If 12 men work 8 hours a day to complete a work in 10 days. How many men working 12 hours a day can complete the work in 5 days?
- (a) 16      (b) 4      (c) 12      (d) 8
51. Find  ${}^7P_7$
- (a) 4440      (b) 5040      (c) 1      (d) 0
52. Find  ${}^7C_5$
- (a) 20      (b) 42      (c) 21      (d) 24
53. 36 workers can reap a field in 6 days. If the work is completed in 4 days, the extra workers required are
- (a) 10      (b) 25      (c) 18      (d) 15
54. A can do a work in 24 days and B can do it in 8 days. In how many days A and B can do the work?
- (a) 20 days      (b) 10 days      (c) 6 days      (d) 8 days

55. The angle between the minute hand and the hour hand of a clock when the time is 6.30 is  
(a)  $15^\circ$                       (b)  $20^\circ$                       (c)  $18^\circ$                       (d)  $10^\circ$
56. Two pipes A and B can fill a tank in 20 minutes when opened simultaneously. If pipe A alone takes 60 minutes to fill the tank, how much time will pipe B alone take to fill the tank?  
(a) 60 min                      (b) 40 min                      (c) 30 min                      (d) 20 min
57. When the time in the clock is 7.20, then the angle between the hands of the clock is  
(a) 100 degrees                      (b) 120 degrees                      (c) 90 degrees                      (d) 110 degrees
58. Today is Monday. After 61 days, it will be  
(a) Thursday                      (b) Tuesday                      (c) Wednesday                      (d) Saturday
59. A pipe can fill a tank in 3 hours. Because of leak in the bottom, it is filled in 4 hours. If the tank is full, how much time will the leak take to empty it?  
(a) 10 hours                      (b) 11 hours                      (c) 12 hours                      (d) 9 hours
60. What was the day of the week on 17th June, 1998?  
(a) Tuesday                      (b) Monday                      (c) Sunday                      (d) Wednesday
61. Two trains 300m and 400m long run at the speeds of 40 kmph and 50kmph respectively in opposite Directions on parallel tracks. The time taken to cross each other?  
(a) 20 sec                      (b) 25 sec                      (c) 26 sec                      (d) 28 sec
62. On which week day August 15, 1947 falls?  
(a) Tuesday                      (b) Monday                      (c) Friday                      (d) Wednesday
63. There are 10 yes or no questions. In how many ways can these be answered  
(a) 1024                      (b) 256                      (c) 100                      (d) 20
64. March 5, 1999 was on Friday, what day of the week will be on March 5, 2000?  
(a) Saturday                      (b) Monday                      (c) Sunday                      (d) Friday
65. The number of new words that can be formed by rearranging the letters of the word 'ALIVE' is  
(a) 23                      (b) 24                      (c) 119                      (d) 120
66. Grish walked 15 m North – West, then turned South and walked another 12 m. How far was he from the starting point  
(a) 9 m                      (b) 3 m                      (c) 18 m                      (d) 27 m

67. How many times in a day, are the hands of a clock in straight line but opposite in direction  
(a) 48                      (b) 22                      (c) 24                      (d) 12
68. How many times are the hands of a clock at right angles in a day?  
(a) 22                      (b) 44                      (c) 38                      (d) 48
69. You go North, turns right, then right again and then go to the left .In which direction are you now?  
(a) North                      (b) West                      (c) East                      (d) South
70. How many persons are there who take both tea and coffee but not Milk?  
(a) 7                      (b) 25                      (c) 10                      (d) 15
71. If P is the brother of Q, Q is the sister of R, and R is the father of S, how is P related to S?  
(a) Father                      (b) Maternal Uncle                      (c) Paternal Grandpa                      (d) Paternal Uncle
72. Today is Friday, after 126 days, it will be  
(a) Sunday                      (b) Tuesday                      (c) Friday                      (d) Monday
73. If B's mother was A's mother's daughter, How is A related to B?  
(a) Maternal Uncle                      (b) Father                      (c) Brother                      (d) Sister
74. In a row of 25 boys, Mithun is twelfth from the left and Nitin is eighth from the right. How many boys are between them.  
(a) 4                      (b) 7                      (c) 6                      (d) 5
75. Tree : Forest :: Grass : ?  
(a) Lawn                      (b) Field                      (c) Garden                      (d) Farm
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