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**Question Paper Code: 96031**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2022

Fourth Semester

Civil Engineering

19UGS631 - Logical Reasoning and Aptitude

(Regulation 2019)

(Common to Biomedical Engineering)





Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

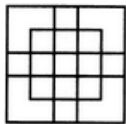
PART A - (10 x 2 = 20 Marks)

1. If  $9 : 8 :: x : 16$  then the value of  $x$  is CO1- U  
(a) 18 (b) 56 (c) 96 (d) 98
2. Ratio between two numbers is 3:2 and their difference is 225, then the smaller number is: CO1- U  
(a) 90 (b) 675 (c) 135 (d) 450
3. If the digits of my present age are reversed then I get the age of my son. If 1 year ago my age was twice as that of my son. Find my present age. CO1- U  
(a) 42 (b) 52 (c) 63 (d) 73
4. A man buys a cycle for Rs.1400 and sells it at a loss of 15%. What is the selling price of the cycle? CO1- U  
(a) Rs. 1090 (b) Rs. 1190 (c) Rs. 1160 (d) Rs. 1202
5. Find the ratio in which rice at Rs. 7.20 a kg be mixed with rice at Rs. 5.70 a kg to produce a mixture worth Rs. 6.30 a kg. CO1- U  
(a) 2 : 3 (b) 4 : 3 (c) 3 : 2 (d) 3 : 4
6. 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? CO1- U  
(a) 4 (b) 7 (c) 6 (d) 5
7. A party consists of grandmother, father, mother, four sons and their wives and one son and two daughters to each of the sons. How many females are there in all? CO1- U  
(a) 14 (b) 17 (c) 40 km (d) 80 km

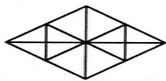
8. If P is the brother of Q, Q is the sister of R, and R is the father of S, how is P related to S? CO1- U  
 (a) Father (b) Maternal Uncle (c) Paternal Grandpa (d) Paternal Uncle.
9. BEGK : ADFJ :: PSVY : ? CO1- U  
 (a) ROUX (b) ORUX (c) LQUT (d) LOQT
10. Which of the following diagrams indicates the best relation between Earth, Sea and Sun? CO1- U
- (a)  (b)  (c)  (d) 

PART – B (10 x 2= 20 Marks)

11. The average of first 12 odd numbers is \_\_\_\_\_ CO1- U
12. An athlete runs 200m race in 24 seconds. Then his speed is \_\_\_\_\_ CO1- U
13. A card is randomly drawn from a deck of 52 cards. The probability of getting a King is \_\_\_\_\_ CO1- U
14. Hands of a clock coincide \_\_\_\_\_ times in a day. CO1- U
15. March 5, 1999 was on Friday, Then the day of the week on March 5, 2002 is \_\_\_\_\_ CO1- U
16. You go North, turns right, then right again and then go to the left .In \_\_\_\_\_ direction are you now CO1- U
17. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then, A related to D is \_\_\_\_\_ CO1- U
18. Missing term in the given alternatives C4X, F9U, I16R, \_\_\_\_\_ CO1- U
19. The number of squares in the given figure is \_\_\_\_\_ CO1- U



20. The number of triangles in the given figure is \_\_\_\_\_ CO1- U



PART – C (5 x 12= 60 Marks)

Answer any **five** of the following questions

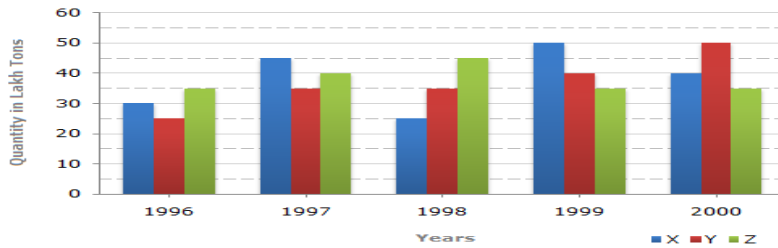
21. (i) A bag contains 50 p, 25 P and 10 p coins in the ratio 5: 9: 4, amounting to Rs. 206. Find the number of coins of each type. CO1- App (12)  
 (ii) 6 years ago, mother's age was 18 years more than the son's age. If the sum of their present ages is 30, what was the age of the mother 6 years back?
22. (i) A clock is set right at 8 a.m. The clock gains 10 minutes in 24 hours will be the true time when the clock indicates 1 p.m. on the following day? CO1- App (12)

- (ii) What was the day of the week falls on 26 January 1950?
23. (i) A committee of 5 persons is to be formed from 6 men and 4 women. In how many ways can this be done when at least 2 women are included? CO1- App (12)
- (ii) How many arrangements can be made out of the letters of the word COMMITTEE, taken all at a time, such that the four vowels do not come together?
24. (i) The compound interest on Rs.1800 at 10% per annum for a certain period of time is 378. Find the time in years? CO1- App (12)
- (ii) The average age of a group of 10 students is 15 years. When 5 more students join the group the average age increase by 1 year. What is the average of new students?
25. The circle-graph given here shows the spending of a country on various sports during a particular year. Study the graph carefully and answer the questions given below it. CO1- App (12)



1. What percent of total spending is spent on Tennis?
  2. How much percent more is spent on Hockey than that on Golf?
  3. If the total amount spent on sports during the year be Rs. 1,80,00,000, the amount spent on Basketball exceeds on Tennis by:
  4. How much percent less is spent on Football than that on Cricket?
  5. If the total amount spent on sports during the year was Rs. 2 crores, the amount spent on Cricket and Hockey together was:
26. (i) If  $P + Q$  means P is the sister of Q;  
 $P - Q$  means P is the brother of Q;  
 $P * Q$  means P is the daughter Q:  
 If  $A - B - C + D * E$ , how is E related to A? CO1- App (12)
- (ii) There is a family of six persons A, B, C, D, E and F. They are Lawyer, Doctor, Teacher, Salesman, Engineer and Accountant. There are two married couples in the family. D, the Salesman is married to the Lady Teacher. The Doctor is married to the Lawyer. F, the Accountant is the son of B and brother of E. C, the Lawyer is the daughter-in-law of A. E is the unmarried Engineer. A is the grandmother of F. What is the profession of B?

27. The bar graph given below shows the data of the production of paper (in lakh tonnes) by three different companies X, Y and Z over the years. CO1- App (12)



1. For which of the given years, the percentage rise/fall in production from the previous year is the maximum for Company Y?
  2. What is the ratio of the average production of Company X in the period 1998-2000 to the average production of Company Y in the same period?
  3. The average production for five years was maximum for which company?
  4. In which year was the percentage of production of Company Z to the production of Company Y the maximum?
  5. What is the percentage increase in the production of Company Y from 1996 to 1999?
28. (i) Statements: All buildings are chalks. No chalk is toffee. CO1- App (12)  
 Conclusions:  
 1. No building is toffee  
 2. All chalks are buildings.  
 On the basis of the given statements, **you should draw all the possible diagrams**, and then derive the solution from each of these diagrams separately. Finally, the answer common to the all the diagrams is taken.  
 Give answer:  
 (A) If only (1) conclusion follows  
 (B) If only (2) conclusion follows  
 (C) If either (1) or (2) follows  
 (D) If neither (1) nor (2) follows and  
 (E) If both (1) and (2) follow.
- (ii)Decoding the following  
 (a)In a certain code language, '123' means 'hot filtered coffee'. '356' means 'very hot day' and '589' means 'day and night'. Which digit stands for 'very'?
- (b) In a certain code, DECEMBER is written as ERMBCED. Which word will be written as ERMBVENO in that code?

