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Question Paper Code: U4031

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2025

Fourth Semester

Agricultural Engineering

21UGS431 - Reasoning and Quantitative Aptitude

(Regulation 2021)

(Common to Mechanical and Electrical Engineering)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Harim's salary was Increased by 50% and subsequently decreased by 50%. How much percent does he lose? CO1- App
(a) 15% (b) 20% (c) 25% (d) 30%
2. Find the average of first 11 odd numbers is CO1- App
(a) 11 (b) 121 (c) 132 (d) 12
3. The simple interest on Rs. 1200 at 4% per annum for 3 years is CO1- App
(a) Rs. 142 (b) Rs. 140 (c) Rs. 144 (d) Rs. 136
4. A and B together can do a work in 6 days. A alone can do it in 10 days. What time B will take to do CO1- App
(a) 15 days (b) 24 days (c) 60 days (d) 30 days
5. How many times in a day, are the hands of a clock in straight line but in same direction? CO1- Un
(a) 44 (b) 24 (c) 48 (d) 22
6. Which of the following is a non-leap year? CO1- App
(a) 1968 (b) 2012 (c) 2018 (d) 1996
7. Which of the following diagrams indicates the best relation between Hockey, Football and Cricket? CO2- App
(a)  (b)  (c)  (d) 
8. Find the Odd man out 1, 8, 27, 64, 125, 256, 343 CO2- App
(a) 27 (b) 100 (c) 125 (d) 256

9. **Question:** How many children are there between P and Q in a row of children? CO2- App
Statements:
 I. P is fifteenth from the left in the row.
 II. Q is exactly in the middle and there are ten children towards his right.
 (a) I alone is sufficient while II alone is not sufficient
 (b) II alone is sufficient while I alone is not sufficient
 (c) Both I and II are sufficient
 (d) Neither I nor II is sufficient
10. In a certain code, MONKEY is written as XDJMNL. How is TIGER written in that code? CO2- App
 (a) QDFHS (b) SDFHS (c) SHFDQ (d) UJHFS
 PART – B (10 x 2 = 20 Marks)
11. The average of 12 numbers is 24. If each number be added by 5. Then the average of new Set of numbers is _____ CO1- App
12. At _____ rate of simple interest a certain sum will be double in 10 years. CO1- App
13. If 6 men dig the well in 15 days than 10 men dig the same well in ___ days. CO1- App
14. The speed of the car is 54 km/hr. What is the speed in m/s? CO1- App
15. $5P_4 =$ _____ CO1- App
16. Today is Thursday. After 119 days, it will be _____ CO1- App
17. P is the mother of K; K is the sister of D; D is the father of J. Then P is the _____ of J. CO2- App
18. P started from his house towards west. After walking a distance of 12 m. He turned to the right and walked 5 m. Now he is _____ m from the starting point. CO2- App
19. Draw the diagrams indicates the best relation between Bird, Dog and Pigeon. CO2- Un
20. If 'eraser' is called 'box', 'box' is called 'pencil', 'pencil' is called 'sharpener' and 'sharpener' is called 'bag', what will a child write with ? CO2- Un

PART – C (5 x 12= 60 Marks)

Answer any **five** of the following questions

21. (i) In an examination, 70% of students passed in physics, 65% in chemistry, 27% failed in both subjects. The percentage of students who passed is: CO1- App (12)
(ii) Find:(a) The fourth proportional to 5, 8, 15;
(b) The third proportional to 9 and 12;
(c) The mean proportional between 8 and 18.
22. (i) 8 years ago Rama's mother was five times older than her daughter. After 8 years the mother will be twice older than her daughter. Find the present age of Rama? CO1- App (12)
(ii) The average weight of a group of 150 students in a class is 60 kg. If the mean of the weights of all the 50 male students in the class is 70 kg. Find the average weight of 100 girls in the class?
23. (i) A man buys an item at Rs. 1800/- and sells it at the loss of 20 percent. Then what is the selling price of that item? CO1- App (12)
(ii) A and B can do a work in 12 days, B and C in 15 days, C and A in 20 days. Then how long will they take to finish it together?
24. (i) How many four digit numbers can be formed using the digits {1, 3, 4, 5, 7} CO1- App (12)
(a) Repetition of digits is allowed?
(b) Repetition of digits is not allowed?
(ii) A man travels from his home to office at 4km/hr and reaches his office 20 min late. If the Speed had been 6 km/hr he would have reached 10 min early. Find the distance from his home to office.
25. (i) Find the angle between the minute hand and the hour hand of a clock when the time is 8.30? CO1- App (12)
(ii) A dice is thrown twice. Find the probability of getting
(a) Doublets
(b) Prime number on each die?
26. (i) A man is facing north-west. He turns 90° in the clockwise direction, then 180° in the anticlockwise direction and then another 90° in the same direction. Which direction is he facing now? CO2- App (12)
(ii) If P+Q means P is the brother of Q ;
If P*Q means P is the mother of Q;
If P+Q means P is the sister of Q,
If “R+P*S”, Then how is R related to S?

27. (i) Rahul walked from the home to North 7 feet. Then he turned to the right and walked 3 feet. Again he turned to the right and walked 11 feet. How far is he from the home? CO2- App (12)
- (ii) Six students P, Q, R, S, T and U are sitting in a round table. P is immediate right of T. T is sitting opposite to Q. U is sitting in between R and Q. Then draw the rough diagram also find,
- (a) Who is sitting opposite to S?
- (b) Who is sitting immediate right of R?
- (c) Q is sitting in between?
28. 1. Complete the given series, CmM, EoO, GqQ, IsS, _____? CO2- App (12)
2. $12 : 60 :: 21 : \text{-----}$
3. Find the next number in the sequence 2, 5, 10, 17, 26, ___?
4. Find the missing letters Z, S, W, O, T, K, Q, G, ?, ?
5. $MO : 13\ 11 :: HJ : ?$
6. Find the odd man out 473, 521, 792, 176, 682, 385.