Question Paper Code: 94031

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

Fourth Semester

Mechanical Engineering

19UGS431 - REASONING AND QUANTITATIVE APTITUDE

(Regulation 2019)

(Common to EEE, Agriculture and Chemical Engineering)

Duration: Three hours | Maximum: 100 Marks

PART A - (10 x 2 = 20 Marks)

S.no	Question	Mark	CO	BLOOM'S LEVEL	MARKS	% OF MARKS
1	If 0.75 : x :: 5 : 8, then x is equal to a) 1.20 b) 1.30 c)2.30 d) 1.02	2	CO1	Understand	02/50	4%
2	The average weight of 16 boys in a class is 50.25 kg and that of the remaining 8 boys is 45.15 kg. Find the average weights of all the boys in the class. a) 48.50 b) 48.55 c)42.80 d) 46.35	2	CO1	Understand	02/50	4%
3	A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets? a) $45\frac{6}{11}\%$ b) $45\frac{2}{11}\%$ c) $45\frac{3}{11}\%$ d) $45\frac{5}{11}\%$	2	CO1	Understand	02/50	4%
4	If 20% of a = b, then b% of 20 is the same as a) 10% of a b) 25% of a c) 4% of a d) None of these	2	CO1	Understand	02/50	4%
5	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	2	CO1	Understand	02/50	4%

6	The speed of the car is 10 m/s. What is the speed in kmph? a) 25kmph b) 30kmph c) 50kmph d) 36kmph	2	CO1	Understand	02/50	4%
7	A train of length 260 m crosses a bridge of length 40 m in 12 seconds. Find the speed of the train a) 60 kmph b) 25 kmph c) 90 kmph d) 100 kmph	2	CO1	Understand	02/50	4%
8	There are 10 yes or no questions. In how many ways can these be answered? a) 1024 b) 256 c) 100 d) 20	2	CO1	Understand	02/50	4%
9	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	2	CO1	Understand	02/50	4%
10	A is 100 m North east of B. C is 100 m South west of B. Then, C is in which direction of A? a) 200 m South West b)200 m North West c) 100 m West d) 100 m North	2	CO1	Understand	02/50	4%

PART – B (5 X 16 = 80 Marks)

(Answer any five of the following questions)

S.no	Question	Mark	CO	BLOOM'S LEVEL	MARKS	% OF MARKS
11	(a)The average temperature for Tuesday, Wednesday and Thursday was 42°C. The average temperature for Wednesday, Thursday and Friday was 44°C. If the temperature on Friday be 43°C, what was the Temperature on Tuesday? (b) The average of 5 numbers is 27.If one number is excluded the average becomes 25.The excluded number is?	16	CO1	Apply	10/50	20%
12	Read the following information carefully and	16	CO1	Apply	10/50	20%

	answer the questions given below: • In a family, there are six members P, Q, R, S, T and U. • P and Q are married couple, P is the wife. • S is the only daughter of R who is the sister of P. • T is brother of S. • Q is son- in- law of U, whose wife is has died. (a)How is U related to P? (b) How many male members are there in the family? (c) How is P related to T?					
13	(a)A and B together can do a work in 4 days. A alone can do it in 12 days. What time B will take to do (b) Three pipes can fill a tank in 6, 10 and 15 hours respectively. If they are opened together, how long does it take to fill the tank?	16	CO1	Apply	10/50	20%
14	(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) How many 4's are there proceeded by 7 but not followed by 3? 5 9 3 2 1 7 4 2 6 9 7 4 6 1 3 2 8 7 4 1 3 8 3 2 5 6 7 4 3 9 5 8 2 0 1 8 7 4 6 3	16	CO1	Apply	10/50	20%
15	(a)If A + B means A is the brother of B; A - B means A is the sister of B and A x B means A is the father of B. Which of the following means that C is the son of M? (A)M - N x C + F (B)F - C + N x M (C)N + M - F x C (D)M x N - C + F (b)A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting ? a. Between B and D b. Between B and C c. Between E and D d. Between C and E	16	CO1	Apply	10/50	20%

16	(a)A sum is invested for three years compounded at 5%, 10% and 20% respectively. In three years, if the sum amount Rs. 1386, then find the sum (b) Every year an amount increases by 1/8th of itself. How much will it be after two years if its present value Rs.64000?	16	CO1	APPLY	10/50	20%
17	Read the following information carefully and answer the questions given below: • Seven students, A, B, C, D, E, F and G are sitting in the first row of the class facing the teacher. • B is third to left of C who is third to right end. • G is second to right of D. • F and D are at two ends. • A is second to left of E and second to right of B. a) Who is sitting in the middle of the row? b) What are the neighbors E? c) Write the arrangements of seven students	16	CO1	APPLY	10/50	20%
18	Study the following table and answer the questions. Classification of 100 Students Based on the Marks Obtained by them in Physics and Chemistry in an Examination.	16	CO1	APPLY	10/50	20%

Subject	Marks out of 50				
	40 and above	30 and above	20 and above	10 and above	0 and above
Physics	9	32	80	92	100
Chemistry	4	21	66	81	100
Average (Aggregate)	7	27	73	87	100

(a)What is the different between the number of students passed with 30 as cut-off marks in

	Chemistry and those passed with 30 as cut-off marks in aggregate? (b)The percentage of number of students getting at least 60% marks in Chemistry over those getting at least 40% marks in aggregate, is approximately?					
19	(a)A man walking at a speed of 6 km per hour. After every km he takes rest for 6 minutes. How much time will he take to cover a distance of 12 km? (b) 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?	16	CO1	APPLY	10/50	20%
20	(a)Thirty six vehicles are parked in a parking lot in a single row. After the first car, there is one scooter. After the second car, there are two scooters. After the third car, there are three scooters and so on. Work out the number of scooters in the second half of the row. (b)How many such numbers are there in the below sequence, each of which is immediately preceded by a consonant and immediately followed by a symbol? R * T J L 2 $ D = M # 8 C % B < K 1 & A W ? P E + Q @ 7 F 6	16	CO1	APPLY	10/50	20%