

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Oct 2018

Course: B. Tech in Computer

Sem: III (S.Y. Computer)

Subject Name: Discrete Mathematics

Subject Code: BTCOC302

Max Marks: 20

Date:- 09/10/2018

Duration:- 1 Hr.

Instructions to the Students:

1. Each MCQ's carries one marks
2. Assume suitable data if necessary
3. All questions are compulsory.

	(Level/CO)	Marks
Q.1		6
1. Compound statement is in _____ if it is obtained by operating AND among variables connected with OR's . A. Conjunctive Normal Form B. Disjunctive Normal Form	Remember	1
2. How many permutations of the letters of the word 'APPLE' are there? A. 30 B. 600 C. 120 D. 60	Application	1
3. A tautology is formula which is always _____ for every value of it's propositional variables. A. True B. False C. Correct D. None	Remember	1
4. The complement of the set A is _____ A. $A - B$ B. $U - A$ C. $A - U$ D. $B - A$	Remember	1
5. A and B two non-empty set then the _____ of A and B is the set of all elements which is either in A or in B but not in both. A. Union B. Intersection C. Subtraction D. Ring Sum	Remember	1
6. Find the domain of the point given(x, 4) when $y = -8x + 20$. A.2 B.3 C.5 D. 6	Application	1
Q.2 Solve Any Two of the following.		3 X 2
(A) Let S be the relation on the set N of positive number define by an equation $X + 3Y = 13$ i.e $S = \{(X, Y) X + 3Y = 13\}$ Find the S of order pair and S^{-1}	Application	3
(B) Let $A = \{1, 2, 3\}$, $B = \{2, 3, 5\}$ and $C = \{4, 5, 6\}$ Is $(A \cap B) \cup C = A \cap (B \cup C)$? Justify your statement.	Application	3
(C) Explain Pigeonhole principle with suitable example.	Remember,	3

- Q. 3 Solve Any One of the following.** **8**
- (A) Let $A=\{4,5,6\}$ $B=\{p, q, r\}$ $C=\{a, b, c\}$ Consider the relation
 $T1=\{(4,q),(5,p),(5,r)\}$ $T2=\{(p,b),(q,a),(r,b),(r,c)\}$ Find,
I) $T1 \circ T2$ II) $M_{T1}, M_{T2}, M_{T1 \circ T2}$ III) Compare $M_{T1 \circ T2}$ with
product of M_{T1}, M_{T2} *Application* **8**
- (B) Explain Growth function in detail. *Remember* **8**