UNIVERSITY OF THE PUNJAB

B.S. Computer Science 2nd Year : Annual – 2021

Subject: Discrete Mathematics
Paper: 6

Time: 30 Min. Marks: 20

Roll No. in Fig. .....
Roll No. in Words. .....
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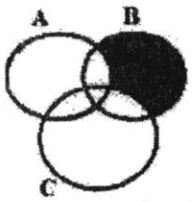
Signature of Supdt.:

Attempt this Paper on this Question Sheet only.
Division of marks is given in front of each question.
This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x2=20)

1. "Some students want to pursue Engineering and some want to excel in Medical Sciences." Which of the following quantified expression can best represent the statement?
   a) $\exists n \wedge \forall x$ b) $\exists n \exists x$ c) $\exists n \vee \exists x$ d) $\exists n \wedge \exists n$
2. The total degree of undirected graph will always be?
   a) Positive b) Even c) Odd d) None of the mentioned
3. Euler path within a graph can be determined by means of?
   a) Edge b) Degree c) Vertex d) None of the mentioned
4. If a compound Proposition statement is made up of four propositions, then the number of distinct combinations in the truth table will be:
   a) 8 b)16 c) 32 d) 64
5. The shaded area of figure is best described by:



   a) $A - B - C$ b) $B - A - C$
   c) $C \cup A$ d) $C \cap A$
6. The expression $\lfloor 4.7 \rfloor + \lceil 3.1 \rceil + \lceil -3.9 \rceil + \lfloor -2.87 \rfloor$ evaluates to:
   a) 1 b) 2 c) 3 d) 4
7. If we have to ensure that at least five of the students have similar grade in a course (where total possible grades are 7), minimum number of students should be?
   a) 12 b) 29 c) 25 d) 35
8. The total number of edges in n-cube graph Q_2 will be?
   a) 2 b) 4 c) 6 d) 8
9. $f(n) = -99n^5 + 87n^4 - 9n^2$ *is*:
   a) $O(n^3)$ b) $O(n^5)$ c) $O(n^6)$ d) Both a and b e) Both b and c f) None
10. Is the relation R defined by "R = {(2,1),(1,2),(1,3),(2,2), (1,1), (3,2)}" reflexive?
    a) Yes b) No c) More information needed d) None of the mentioned