GOVERNMENT DEGREE COLLEGE GANDERBAL

Assignment for BCA 2nd Semester Regular Batch 2019
Backlog Batch 2016/2017/2018

DISCRETE STRUCTURES **Course Code:BCA-16202CC**
Marks:90

Attempt any 04 Questions and each question carries equal weight age.

Q1 Explain the concept of set theory and how we represent sets?

(i)List the subsets of the set A={1,2,3}.

(ii)Let A ={ 1,2,3,4,5}

B={ 3,6,8,12,17} , Find:

(a)A ∪ B (b) A ∩ B (c) A – B (d) B – A .

Q 2. The relation R on the set { 1,2,3,4,5} defined by the rule $(x,y) \in R$ if $x+y \leq 6$.Find

(i) The elements of R .
(ii) The elements of R^{-1}.
(iii) The domain of R.
(iv) The range of R.
(v) The domain and range of R^{-1}.

Q3 (a). Give an example of a Graph G that has an Eulerian circuit which is also a Hamiltonian circuit .

(b). How many vertices do a graph have if they contain 16 edges and all vertices of degree 2.

Q 4. Prove that the following prepositions are Tautologies.

(a) $P \vee \neg p$
(b) $\neg(p \vee q) \vee [(\neg p) \wedge q] \vee p$.
(c) $\neg p \Rightarrow (p \Rightarrow q)$.
(d) $(p \wedge q) \Rightarrow (p \Rightarrow q)$.

Q5.Consider the following :

P: it is cold day .

q: The temperature is 5 ^{o} c.

write in simple sentences the meaning of the following

(a) $\neg p$
(b) $P \vee q$
(c) $P \wedge q$
(d) $\neg(p \vee q)$
(e) $\neg(p \wedge q)$
(f) $\neg p \wedge \neg q$

Instructions:

1. The assignment is to be submitted through google class room having code **gxkv7cc.**
2. Last date of assignment submission is ***26/06/20.***
3. The assignment must be ***handwritten***.
4. Students must write page no., roll no., registration no. on the top right corner of each page.
5. A4 size ruled paper with not more than ***10*** pages converted into a single PDF file using. ***camscanner*** will be only accepted.
6. Students are advised to preserve hard copy of Assignment.
7. Do not copy answers from other students.
8. Assignments should be scanned properly for clear visibility.

Title page of assignment must contain

- Name of the candidate……..
- Semester……
- Category:Fresh/Backlog……
- Batch:……
- Roll No……
- Regd no……..
- Subject……
- Cell no……..
- e-mail address……..
- Date of Submission……
- Signature of Candidate……..