EK-198

B.E.(IInd Sem.) (CGPA) CSE Examination-2016

DISCRETE STRUCTURE

Paper - CS-205

Time Allowed : Three Hours
Maximum Marks : 60

Note : Attempt all six questions.
All questions carry equal marks.
Symbols have their usual meanings.

Q.I   Write short notes on the following—

(a) Explain countable and uncountable sets with example.

(b) Explain lattice and its properties.

(c) Explain group and its properties.

(d) Explain Hamiltonian walk by using suitable example.

(e) What is graph coloring ? Explain by suitable example.

(2)

Unit-I

Q.II Given that—

A = { x : x is a even natural number less than or
equal to 10}

and

B {x : x is an odd natural number less than or equal
to 10}

Find—

(i) A − B

(ii) B − A

(iii) Is A − B = B − A ?

or

If $f(x) = \sqrt{x+1}$ and $g(x)=x^2+2$, calculate fog and
gof.

Unit-II

Q.III Use the truth tables method to determine whether

$(p \to q) \vee (p \to \neg q)$ is valid.

or

Differentiate between syntax and semantics
propositional logic.

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(3)

Unit-III

Q.IV   Differentiate between Boolean and Pseudo-Boolean Lattics with example.

or

Discuss Tarski's fixed point theorem.

Unit-IV

Q.V   What is Ring ? Explain all the properties of Ring with example.

or

Explain the following—

(a) Semi group

(b) Monoid

Unit-V

Q.VI   Explain the Pigeon-Hole principle and its advantages.

or

What do you mean by graph isomorphism, show it by example.

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