MATS UNIVERSITY

MATS INSTITUTE OF OPEN & DISTANCE LEARNING, AARANG RAIPUR (C.G)
Aarang-Kharora Highway,Gullu, Aarang Raipur (C.G.) - 493 441
Website : www.matsuniversity.ac.in Phone No. : 0771 - 4078996

सत्रीय कार्य / Assignment Work – 2019-20

M.Sc.Computer Science (Previous)

Max Marks – 30 **Min Marks - 10**

निर्देश: सत्रीय कार्य के प्रत्येक विषय में कुल 30 अंक हैं । सभी प्रश्नों के अंक समान होंगे । सभी प्रश्न हल कीजिए।

(Assignment Work of each paper carries 30 Marks. All questions carry equal marks. Attempt all questions.

Paper-I (Discrete Mathematics)

1. Define Group, Ring and Field with example.
2. What do you understand by combinations?
3. Show that the following sets are countable. (a) I/Z – Set of integer (b) Q – Set of rational numbers.
4. Find a generating function for the recurrence relation.
   $C_n = 3C_{n-1} - 2C_{n-2,}\ n \geq 2\ and\ C_1 = 5, C_2 = 3$
5. Examine the following set of vectors of V_3 (R) is linearly independent or linearly dependant.
   S = {(1,2,0)(0,3,1)(-1,0,10}.

Paper-II (Algorithms and Data Structure)

1. What is a classification of data structure? Show with examples.
2. Explain implementation of stack using linked list.
3. What do you mean by array?
4. What are the applications of binary tree?
5. What is the Indexing Mechanisms?

Paper – III (Programming using C++)

1. Explain advantages and applications of OOP.
2. What are the processes involved in the development of C++ program?
3. Explain different data types.
4. Explain the special characteristics of constructor functions.
5. What are the basic stream classes?

Paper – IV (Data Communication & Networking)

1. What are the communication networks?
2. Write short note on Asynchronous Transmission.
3. Explain the characteristics of transmission line.
4. What is fragmentation?
5. What are the general approaches to attacking a cipher?

Paper – V (Computer Organization and Architecture)

1. Describe the function view of the computer system
2. What are computer codes? Explain grey and excess-3 codes.
3. What do you mean by register transfer language?
4. Explain different logic micro operations, with the help of a table.
5. Explain different logic micro operations, with the help of a table.

Paper – VI (DBMS Concepts)

1. What is mapping cardinalities?
2. What are integrity rules? Explain.
3. Explain the operators set with meaning and use of all the operators with reference to tuple relational calculus.
4. Explain distributed database management system in detail.
5. What is ACID?

Paper – VII (System Analysis And Design)

1. Explain the role of system analyst.
2. What do you mean by system planning? Why is it required?
3. What do you mean by structured design?
4. What do you mean by file organization?
5. What do you understand by system planning?

Paper – VIII (Internet Technology And Web Application)

1. What is virtual packet switching? Explain with suitable example.
2. Describe the advantages of electronic commerce.
3. What is a Web Browser? Write basic feature of an ideal Browser?
4. What do you mean by Asymmetric Cryptosystems? Explain.
5. Explain cryptographic algorithm and keys.

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