मैट्स विश्वविद्यालय मुक्त एवं दूरवर्ती शिक्षा कार्यक्रम आरंग, रायपुर (छ0ग0)

MATS UNIVERSITY OPEN & DISTANCE LEARNING CENTRE ARANG, RAIPUR (C.G.)

सत्रीय कार्य / Assignment Work – 2016 -17

M.Sc.Computer Science (Previous)

Max Marks – 30 **Min Marks-12**

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. Determine the sets A and B, given that
   $A \cup B = \{1,2,4,5,7,8,9,10\}$, $A \cap B = \{2,4,7\}$ and $A - B = \{1,8\}$.
2. What do you understand by combinations?
3. Prove that every cubic graph has an even number of vertices.
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. Define homomorphism of ring with example.

Paper-II (Algorithms and Data Structure)

1. What do you mean by complexity of algorithm?
2. Explain implementation of stack using linked list.
3. Write an algorithm to insert an element in a circular queue.
4. What are the applications of binary tree?
5. Explain different collision resolution techniques.

Paper – III (Programming using C++)

1. What do you need the preprocessor directive #include<iostream.h>
2. What are the processes involved in the development of C++ program?
3. What is a calling function and what is a called function? Explain with the help of an example.
4. Explain the special characteristics of constructor functions.
5. Explain protected base class inheritance with suitable example.

Paper – IV (Data Communication & Networking)

1. Explain need and uses of Networks.
2. Write short note :-
   a) Asynchronous Transmission
   b) Synchronous Transmission
3. Explain the characteristics of transmission line.
4. Explain CSMA protocol and its different types.
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 with suitable diagram.
2. Differentiate the weighted and non weighted code.
3. Write steps that should be used to simplify K-map.
4. Explain different logic micro operations, with the help of a table.
5. Explain the write through method and write back method with respect to cache memory.

Paper – VI (DBMS Concepts)

1. Explain the implementation of network database in detail.
2. What are integrity rules? Explain in detail.
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 Indexing? What are various types of Indexing methods? Explain.

Paper – VII (System Analysis And Design)

1. What is prototyping? Discuss its functions in detail.
2. What do you mean by system planning? Why is it required?
3. What do you mean by structured design?
4. How many types of software are there? Explain.
5. Why is data processing essential? Describe EDP Organization?

Paper – VIII (Internet Technology And Web Application)

1. What is virtual packet switching? Explain with suitable example.
2. What do you mean by Bandwidth? Explain with suitable example.
3. What is a Web Browser? Write basic feature of an ideal Browser?
4. What do you mean by Asymmetric Cryptosystems? Explain.
5. What is firewall? Explain with suitable example.

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