

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

#### Unit - I

1. a) Which is the fastest accessible memory? What it is made-up of. 2

b) Distinguish between remote sensing and GIS. 2

c) Explain 16-bit instruction format. 3

d) What is operating system? Explain the functions of operating system as resource manager. 7

OR

Distinguish between toolkit and software package. Explain the four most important components of MS-Office. 7

#### Unit - II

2. a) Define an Algorithm. Distinguish between algorithm and flowchart. 2

b) Distinguish between procedural programming and object oriented programming. 2

c) Explain and illustrate function overloading. 3

d) Explain classification of programming languages with special emphasis of High Level Programming Languages. 7

OR

Explain various data types in C++. 7

#### Unit - III

3. a) Distinguish between type casting and automatic type conversion. 2

b) Explain the concept of function prototyping. 2

c) What are friend functions? Explain their characteristics with suitable example. 3

d) What is inheritance? Explain and illustrate various types of inheritance. 7

OR

What is data structure? Why these structures are required. Explain and illustrate four basic data structures. 7

#### Unit - IV

4. a) What is protocol? How it differs from program. 2

b) Distinguish between DOS (Denial Of Service) and spoofing. 2

c) What is firewall? Explain with the help of block diagram. 3

d) Explain TCP / IP protocol suite with the help of suitable block diagram. 7

OR

What is the function of Network layer? Explain various routing protocols. Distinguish between hub, switch and bridge. 7

#### Unit - V

5. a) What is database? How it differs from data file. 2

b) Distinguish between primary key and candidate key with the help of an example. 2

c) What is cloud computing? Explain the pros and cons of cloud computing. 3

d) What are the functions of DBA? Explain the architecture of Database system. 7

OR

Explain cloud infrastructure. Give various cloud deployment models. 7

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