Total number of printed pages–7

42 (2) IAWT 2

2019

INTERNET AND WEB TECHNOLOGY

Full Marks : 70

Time : Three hours

The figures in the margin indicate full marks for the questions.

Question Nos. ***1*** *&* ***2*** *are* ***compulsory*** *and answer* ***any three*** *from the rest.*

1. Fill up the blanks : 1×10=10

(a) The _____ layer is the topmost layer in the OSI model.

(A) physical

(B) transport

(C) session

(D) application

Contd.

(b) Encryption is handled by the _____ layer.

(A) data link

(B) transport

(C) session

(D) presentation

(c) The com domain name refers to _____.

(A) common

(B) commercial

(C) computer

(D) None of the above

(d) The world's first real Web browser was _____.

(A) Mosaic

(B) Internet Explorer

(C) Netscape Navigator

(D) None of the above

(e) Generally, the closing HTML tag is indicated by the _____ character.

(A) *

(B) /

(C) \

(D) @

(f) The _____ tag can be used to create hyperlinks.

(A) anchor

(B) arrow

(C) link

(D) pointer

(g) JavaScript is _____ language.

(A) interpreted

(B) compiled

(C) interpreted and compiled

(D) None of the above

(h) PHP stands for _____.

(A) Hypertext Preprocessor

(B) Personal Hypertext Preprocessor

(C) Personal HTML Processor

(D) None of the above

(i) JavaScript is contained inside the _____ tags.

(A) .....

(B) <script>.....</script>

(C) <head>.....</head>

(D) <body>.....</body>

(j) The main page of a Web site is generally called the _____.

(A) chief page

(B) main page

(C) home page

(D) house page

(b) Create a static HTML page that displays the following table : 5

Book name	Author
Operating System	Godbole
Data Communication	Stallings
Web Technologies	Kahate
Mobile Communication	Jochen

5. (a) Write the difference between Client side scripting language and Server side scripting Language. 4

(b) Briefly explain the characteristics of LAN, MAN and WAN. 2+2+2=6

6. (a) Write PHP code to find the larger of two numbers. 5

(b) Write the JavaScript code to enter a number and check whether it is even or odd. 5

2. Answer very briefly : 2×5=10

(a) What is Ethernet ?

(b) Give *two* examples of network topology.

(c) Give *two* examples of Web browsers.

(d) What are the two parts of an IP address ?

(e) Give *two* examples of transport layer protocol.

3. Explain the different layers of OSI reference model. 10

4. (a) Discuss the use of HTML tags, *i.e.*, Title, Heading, Paragraphs, Bold letter and Line breaks with an example. 5

7. Write short notes on : ***(any two)*** 5×2=10

(a) E-mail

(b) FTP (file transfer protocol)

(c) Internet security

(d) Impact of Internet on society.

2019

DATABASE MANAGEMENT SYSTEM

Paper : 1·5

Full Marks : 70

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer ***any seven*** *questions.*

1. *(a)* Define database. What do you mean by database management system ? What are the major advantages of DBMS ? 1+2+3=6

   (b) Define primary key and secondary key with example. 4

2. *(a)* What are the major characteristics of DBMS ? 4

   (b) Define entities and attributes. Explain with example. 4

3. *(c)* Define multivalued attributes. 2

   (a) Define entity integrity constraint. Why is it important ? 4

   (b) Define relational model. What do you mean by cardinality and degree of a relation ? 2+(2+2)=6

4. *(a)* Define SQL. What are the major data types of SQL ? 5

   (b) Define relationship. What do you mean by binary and ternary relationships ? 5

5. *(a)* What is normalization ? Why is it important ? 5

   (b) Define first normal form. Explain with the help of example. 5

6. Define the following terms : 2×5=10

   (a) JOIN

   (b) Functional Dependency

   (c) Stored and Derived Attributes

   (d) Transitive Dependency

   (e) BCNF (Boyce-Codd-Normal Form)

7. *(a)* Consider the following relational schema and solve the queries :

   Student (Rollno, Name, Address, Course)

   (a) Give syntax to insert data into a table. 1

   (b) List the name of students who live in "Guwahati". 1

   (c) List the name of those students who are from "Kolkata" and enrolled in course "BCA". 2

   (d) Give syntax to change the name of Roll no 10 to Amar. 2

   (b) Define DDL commands. Name some of the DDL commands. 4

8. *(a)* What are entity relationship diagrams ? Give the symbols used to represent the components of ER diagram. 2+4=6

   (b) Give syntax for : 4

   (i) Create

   (ii) Delete.

42 (2) DSCL 1

2019

DATA STRUCTURE THROUGH C LANGUAGE

Paper : P6

Full Marks : 70

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. *(i)* Define fundamental data types and derived data types. 4

   (ii) What do you mean by doubly linked list ? How does it differ from singly linked list ? Write the data structures for these two types. 1+2+4=7

2. *(i)* What do you mean by stack, stack overflow and stack underflow ? 1+1+1=3

   (ii) Write a program to perform push and pop operations in a stack. 6

Contd.

3. *(i)* Why is queue known as a FIFO structure ? Explain with proper diagram. 4

   (ii) Write a program to implement queue. 6

4. *(i)* Convert the expression $((A+B)*C-(D-E)\wedge(F+G))$ to equivalent prefix and postfix notations. 3+3=6

   (ii) What is garbage collection ? 2

5. Write a program to multiply two matrices. 8

6. *(i)* What is graph ? Explain path, cycle and degree of a graph. Also explain the applications of graph theory in computer science. 1+3+3=7

   (ii) What are the advantages and disadvantages of binary search over linear search ? 3

7. *(i)* Write a program to implement a simple binary tree. 6

   (ii) Write the difference between binary tree and binary search tree. 2

8. Consider the following algebraic expressions :

   (i) $(a+b)*(c-d)/e$

   (ii) $a*(b+c)+d/(e-b)$

   (iii) $(a+b)/(c*d)-f/g$

   Draw trees for these expressions. 6

———