

2017

WEB TECHNOLOGY

Paper :6.2.1

Full Marks : 80

Time : 3 Hours

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

1. a) What do you mean by Internet? 1×5=5
b) Define web page.
c) What do you mean by web browsers?
d) What is the full form of URL?
e) What do you mean by VB script?
2. Answer **any five** : 2×5=10
a) What do you mean by Broadband network? Give one example.
b) Mention the two web server.
c) Why do we need the <form> tag in HTML? Give one example.
d) Write two differences between HTML and XML.
e) Why Java Script is called client side scripting language.
f) What do you mean by proxy server? Give one example.
3. Answer **any four** : 4×5=20
a) What do you mean by IP address? Briefly explain the different classes of IP address.
b) What are the differences between Internet and Intranet? Give one example of each.

- c) Write four differences between Java and Java Script? Define WiFi.
d) What do you mean by style sheets in HTML? Give one suitable example.
e) How VBScript is interacting with HTML forms? Give one example.

4. Answer **any five** : 6×5=30
a) How to links the different web pages? Briefly explain with a suitable html program.
b) Write a Java Script code to find the factorial of any number.
c) What do you mean by XML DTD? Briefly explain with a simple XML DTD program.
d) What do you mean by JDBC and ODBC? Write the differences between static website and dynamic website with examples.
e) Write a VB Script program to generate the Fibonacci series.
f) Briefly explain the Web Server Architecture.
5. Write short notes (answer **any three**) : 3×5=15
a) COM (Component Object Model).
b) DCOM (Distributed Component Object Model).
c) CORBA (Common Object Request Broken Architecture).
d) FTP (File Transfer Protocol).
e) TELNET.

44 (5) 5.4.4

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ANIMATION

Paper : 5.4.4

(Elective)

Full Marks : 50

Time : Two hours

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

Answer **any five** questions.

1. Define the following terms : 2×5=10
- (a) Video Card
 - (b) Drop shadowed text
 - (c) Tweening
 - (d) Sound Card
 - (e) HTML.

Contd.

2. What is Multimedia ? Discuss about different types and examples of multimedia software.

10

3. (a) What are flash tools ? How we can use them ? Explain.

6

- (b) How we can add a timeline effect and edit its settings in Animation ?

4

4. (a) What are post production software ?

3

- (b) Explain the importance of the following image formats

7

JPEG, GIF, SWG

5. (a) What are Movie clips ? How we can create and edit movie clips ?

5

- (b) What are the major data types in Action Script ?

5

6. Write short notes on : **(any two)**

2×5=10

- (a) Flash learning Interactions

- (b) Elementary Animation using Action Script

- (c) Video supported format in Flash.

CYBER LAW

Paper : 6:2:2

Full Marks : 80

Time : Three hours

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

PART-A

Answer **any five** questions from the following :
1×5=5

1. What do you mean by Internet ?
2. What do you mean by Networking ?
3. What is Cyber Space ?
4. What do you mean by Computer Related Crime ?
5. What does C RAT stands for ?
6. What does LPO stands for ?

PART-B

Answer **any five** questions from the following :
2×5=10

7. What do you mean by online resources ?
8. What do you mean by Information Technology ?
9. What is cyber defamation ?
10. What is Spoofing ?
11. What is Sniffing ?
12. What is e-taxation ?

PART-C

13. Write short notes on **any five** from the following :
5×5=25

- (a) Cyber Security
- (b) Hacking and Cracking
- (c) Malicious Programs

(d) e-governance

(e) The Cyber Regulation Appellate Tribunal

(f) Legal Software

(g) Scope of Cyber Law in e-commerce.

PART-D

Answer **any five** questions from the following :
8×5=40

14. Explain the language of Cyber Space. What is the procedure for legal enactments of Cyber Laws ?
3+5=8
15. Write briefly about the objectives and salient features of the Information Technology Act, 2000.
4+4=8
16. What is Digital Signature ? How is it implemented in a Digital Certificate ? What is the difference between Digital and Electronic Signature ?
4+2+2=8
17. Discuss about the various cyber offences and their contraventions under the Information Technology Act, 2000.
8

18. Write a descriptive note on the "Freedom of Expression in Cyberspace."
8

19. Write an elaboratory note on 'Global Efforts on Electronic Communication and Protection'.
8

20. Elucidate the term 'Cyber Terrorism'. Discuss about the global trends in Cyber Law.
4+4=8

2017

COMPUTER ORGANIZATION AND ARCHITECTURE

Paper : 3-2

Full Marks : 80

Time : Three hours

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

1. Answer very briefly : $2 \times 10 = 20$
- (a) What do you mean by opcode and operands in an instruction?
 - (b) What is an instruction format?
 - (c) Write about the sequence of execution in straight-line sequencing.
 - (d) What is IEEE floating point standard?
 - (e) What are the different functions of direct memory access?

Contd.

- (f) What do you mean by Conditional Control Statement?
 - (g) What is floating point representation?
 - (h) Write the different steps in the design of ALU.
 - (i) What do you mean by memory mapped I/O?
 - (j) What is an interrupt?
2. Answer **any five** : $6 \times 5 = 30$
- (a) Differentiate between Hardwired and microprogrammed control unit.
 - (b) Explain different types of shift microoperations.
 - (c) Explain Interregister-transfer microoperation.
 - (d) Write about memory-mapped I/O, Isolated I/O and Interrupt-driven I/O.
 - (e) Differentiate between straight-line sequencing and branching.
 - (f) What do you mean by programmed I/O? Explain in detail.

- (g) Write about enabling and disabling interrupts.
3. Answer **any three** : $10 \times 3 = 30$
- (a) Explain Zero, One, Two and Three Address instruction with an examples of each.
 - (b) Explain the different techniques used for Mapping functions.
 - (c) Explain the design of Accumulator with the help of block diagram and function table.
 - (d) Explain the different types of addressing modes used in the computer.
 - (e) Explain the design of a simple computer with the help of block diagram.

MATHEMATICS-II

Paper : 2.3

(New/Old)

Full Marks : 80

Time : Three hours

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

1. (a) For the non empty sets A, B, C prove that

$$A \times (B - C) = A \times B - A \times C \quad 3$$

- (b) Prove that

$$n(A \oplus B) = n(A) + n(B) - 2n(A \cap B) \text{ where } A \text{ and } B \text{ are non-empty sets.} \quad 3$$

- (c) Out of 25 students in a class 12 students take Mathematics, 8 students take Mathematics but not Economics. Find the number of students who take Mathematics and Economics both and who take Economics but not Mathematics. 5

- (d) Prove that $P(n) = 10^n + 3.4^{n+2} + 5$ divisible by 9. 4

- (e) If $f: A \rightarrow B$ is an one-one and onto function then prove that $f^{-1}: B \rightarrow A$ is also one-one and onto function. 5

- (f) Let R be the relation ($\subseteq$) defined on the power set $P(A)$ of the non-empty set A , then prove that relation R is a partial order relation. 5

2. (a) Define degree of vertex in a Graph. Prove that in a graph the number of odd vertices is always even. 1+3=4

- (b) Define Tree. Prove that a tree with n vertices there will be $n-1$ edges. 1+4=5

- (c) Define Bipartite graph. Draw a Bipartite graph with 8 vertices. 2+2=4

- (d) Define Edge Connectivity and Vertex Connectivity. 2+2=4

- (e) Find the maximum and minimum height of a binary tree with 13 vertices. 3

3. (a) If $n \geq 0$ then prove that $\sum_{k=0}^n \binom{n}{k}^2 = \binom{2n}{n}$. 5

- (b) How many different committees can be formed with 7 members from a group of 6 men and 5 women if 3 women always in each committee? 3

- (c) In an examination a student have to answer 12 out of 15 questions. How many choices thus the student have

- (i) In all
(ii) If he must have to answer the first two questions
(iii) If he must answer the first or second question but not the both? 1+1+1=3

- (d) Suppose there are 6 boys and 5 girls.

- (i) In how many ways can they sit in a row?
(ii) In how many ways can they sit in a row if the boys and girls each are to sit together? 2+2=4

4. (a) Show that $(p \wedge q) \rightarrow (p \vee q)$ is a tautology. 3

- (b) Simplify the Boolean expression

$$Z(Y + Z)(X + Y + Z) \quad 3$$

- (c) Construct truth tables for — 2+2=4

(i) $(p \rightarrow q) \rightarrow (p \rightarrow \sim q)$

(ii) $(p \rightarrow q) \wedge (q \rightarrow p)$

OR

Define C.N.F. and D.N.F. of logical expressions. Show with the help of an example how a C.N.F. expression can be converted to a D.N.F. expression.

5. (a) The 12th term of an A.P. exceeds the 3rd term by 36. If the 16th term is 64, determine the series. 2

- (b) If the n th term of an A.P. is $4n-3$, find the series. 2

- (c) The 2nd term of a G.P. is 3 and 5th term is $81/8$, find 8th term. 2

- (d) The sum of the first eight terms of a G.P. is five times the sum of first four terms. Find the common ratio. 4

2017

**OBJECT ORIENTED PROGRAMMING
IN C++**

Paper : 3-4

Full Marks : 80

Time : Three hours

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

1. Define the following terms : 4×3=12
 - i) Class and object
 - ii) Data hiding
 - iii) Friend function
 - iv) Polymorphism
2. How **call by reference** differs from **call by pointer**? Explain with an example. 8
3. a. What are constructors and destructors? 4

Contd.

- b. By how many ways a copy constructor can be invoked? Explain briefly. 6

4. Develop a class to store the information of a student i.e. NAME, ROLL NO, BRANCH. Also develop a parameterized constructor and the code segment to invoke that constructor. 10

5. a. What is inheritance? 2

Or

What is virtual base class?

- b. Explain multiple and hierarchical inheritance. 8

Or

How a virtual base class helps in inheritance? Show with an example.

6. a. Write a program to overload — operator for string without using friend function. 10

Or

Write a program to implement exception handling as stated below.

- Read two strings where number of characters should not be different
- Strings should not be same.

7. a. What is runtime polymorphism? 2
 - b. How a base class object pointer can access derived class member function without type casting? Explain with an example. 8
8. a. What do you mean by an **abstract class**? 3
 - b. What is template? What is its advantage? 2+2
 - c. What is a generic catch block, discuss briefly. 3