

Roll No. ....

Total Pages : 03

BT-3/D-23

43167

## ELECTRONICS FUNDAMENTALS

ES-201A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (a) Discuss the forward bias, reverse bias and no bias condition of a P-N junction diode. Draw V-I characteristics for each.
- (b) How a Zener diode act as a Voltage Regulator ?  
Discuss the operation in detail. **15**
2. (a) Discuss with the help of VI characteristics, how an Avalanche breakdown differs from a Zener breakdown.
- (b) Write a short note on Light emitting diode. **15**

(5-41/5) L-43167

P.T.O.

## Unit II

3. (a) Discuss the operation of a transistor in PNP mode.  
(b) Discuss the common emitter mode of configuration with its characteristics. **15**
4. (a) What is Biasing ? Discuss in detail the base resistor method of biasing.  
(b) What is transistor load line ? Discuss DC load line in detail. **15**

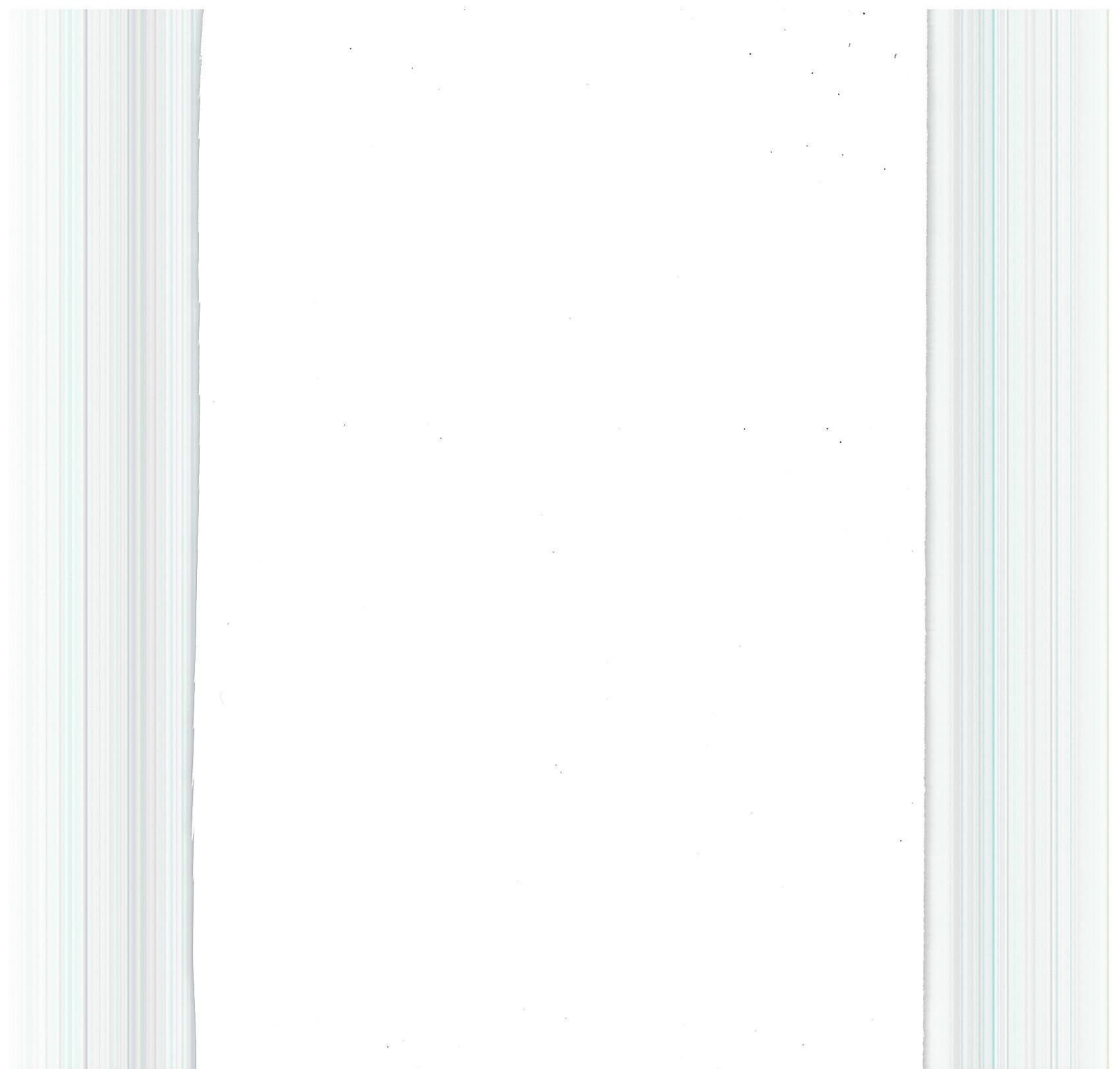
## Unit III

5. (a) What is Barkhausen criterion of oscillations ? Derive its equation.  
(b) What is Wein bridge Oscillator ? Discuss its operation in detail. **15**
6. Write short notes on the following : **15**
  - (a) Crystal oscillator
  - (b) Tuned collector oscillator.

## Unit IV

7. (a) Discuss the terms :  
Sensitivity, Resolution, Repeatability and Drift in context to electronic measurement system.  
(b) What is an error ? Discuss the various types of errors encountered in an electronic measurement system. **15**

8. (a) What is a Transducer ? Discuss the characteristics and selection criterion for transducer measurement.
- (b) What is Data acquisition system ? With the help of a block diagram, explain its working. 15



Roll No. ....

Total Pages : 03

**BT-3/D-23**

**43168**

**DIGITAL ELECTRONICS AND  
LOGIC DESIGN  
ES-217A**

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit.

**Unit I**

1. (a) Convert the following binary number in Decimal and Hexadecimal numbers : 5
  - (i) 110.1010
  - (ii) 10101
- (b) Perform the following operations using 1's compliment : 5
  - (i)  $36 - 23$
  - (ii)  $23 - (-15)$
- (c) Explain the conversion of OR operation into AND operation with the help of demorgan theorem. 5
2. (a) Draw the logic diagram of 4 bit binary to grey code convertor. Explain the conversion method of binary code to grey code with the help of an example. 7

(7-31/17)L-43168

P.T.O.

- (b) Minimize the expression using K-Map :  
 $F = \Sigma(1, 2, 5, 6, 8, 9, 10) + d(3, 7, 15)$ . Also realize the obtained expression using AOI logic. 8

### Unit II

3. (a) State and explain the working of BCD adder with its logic diagram. 10  
(b) Design an octal to binary encoder. 5
4. (a) What do you mean by multiplexer ? Explain the working of  $n : 1$  mux. Implement the given expression using  $8 : 1$  MUX  $F(A, B, C, D) = \Sigma(0, 1, 2, 4, 9, 10, 12, 15)$ . 10  
(b) Design a 3 bit odd parity generator. 5

### Unit III

5. (a) Explain the working of SR flip flop. Explain the problem associated with SR flip flop. 8  
(b) Convert D flip flop in T flip flop. 7
6. (a) Design an asynchronous decade counter. Use J-K flip flop for designing the counter. 8

- (b) What do you mean by register ? Draw and explain the logic diagram of serial in serial out shift right register. 7

#### Unit IV

7. Explain about specifications of Digital to Analog converters. Explain working of weighted resistor. Digital to Analog Converter. 15
8. (a) Describe working of Flash type ADC. 7
- (b) What is PAL ? How is it different from PLA ? 8

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Roll No. ....

Total Pages : 02

BT-3/D-23

43169

DATA STRUCTURES

PC-IT-205A

Time : Three Hours]

[Maximum Marks : 75

**Note** : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (a) What is difference between structure and Matrix ? 5
- (b) Write a program to implement Binary search and explain it with the help of an appropriate example. 10
2. Write an algorithm of insertion sort and explain it with the help of an appropriate example. 15

**Unit II**

3. What are different steps to convert infix expression to postfix expression ? Convert exp = " $a + b * c + d$ " into postfix expression. 15

(3-49/11)L-43169

P.T.O.

4. What do you mean by Polish notation ? Also explain and implement Circular Queue and its applications. 5+3+5+2

### Unit III

5. What are different applications of Dynamic structure ? Write an program to implement Stack using linked list. 15
6. What do you mean by dubly linked list ? Write a program to implement insertion at first position, at any point and at last position in doubly linked list. 15

### Unit IV

7. What do you mean by Binary tree ? Write an algorithm to display binary tree of expression  $X = 3 + ((5 + 9) * 2)$  and show inorder travesal. 15
8. What is AVL tree and threaded tree ? Write an algorithm to insert a node in AVL Tree. 15

Roll No. ....

Total Pages : 02

BT-3/D-23

43170

OBJECT ORIENTED PROGRAMMING

USING C++

PC-IT-207-A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. What do you mean by encapsulation and abstraction ?  
Explain private, public, protected and by default accesifier  
with the help of programming. 5+10
2. What is friend class and friend methods ? Explain this,  
delete and new with the help of source code of C++.  
15

**Unit II**

3. What is operator overloading ? Write a program to  
implement unary C++ opeartor. 15

(3-49/12)L-43170

P.T.O.

4. (a) What is composition and inheritance and differentiate by taking an appropriate example ?
- (b) What is constructor and destructor ? Write a program to show implicit derived class and multiple inheritance. 5+3+7

### Unit III

5. What is virtual function and dynamic binding ? Write a program to implement area and volume of cuboid using abstraction. 5+10
6. What is input and output stream classes ? Write a program to copy data from abc.txt file to def.txt file. 5+10

### Unit IV

7. What do you mean by exception handling ? What is throwing and rethrowing an exception ? Write a program to display message that "you are allowed to vote" if age  $\geq$  18 otherwise "not allowed to vote". 15
8. What is function template ? Write a program to overload function template of average of 10 numbers. 15

Roll No. ....

Total Pages : 02

BT-3/D-23

43172

FUNDAMENTALS OF MANAGEMENT

HM-905A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory.

**(Compulsory Question)**

3. Write notes on the following : 5×3=15

- (a) Management functions.
- (b) Source of finance.
- (c) Job description and job specification.
- (d) Introduction to HRD.
- (e) Modern marketing concepts.

**Unit I**

2. Discuss briefly meaning, objectives and social responsibility of business environment. 15
3. Write notes on the following : 8+7
- (a) Henry Fayol's principles.
  - (b) Nature of management.

(3-50/I) L-43172

P.T.O.

## **Unit II**

4. Discuss briefly the introduction, finance management and objectives of financial decision. **15**
5. What do you understand by the term capital structure ? Discuss the feature of capital structure. **15**

## **Unit III**

6. Discuss briefly meaning, importance and process of job analysis. **15**
7. Discuss the nature, scope and functions of personnel management in an industrial organization. **15**

## **Unit IV**

8. Discuss the meaning and importance of production control. Discuss the steps involved in production control. **15**
9. Bring out briefly the meaning, nature and scope of international marketing. **15**

Roll No. ....

Total Pages : 02

BT-3/D-23

43142

MATHEMATICS-III

BS-205A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Section. All questions carry equal marks.

**Section A**

1. Examine the convergence of the series :

(i)  $\frac{1}{2\sqrt{1}} + \frac{x^2}{3\sqrt{2}} + \frac{x^4}{4\sqrt{3}} + \frac{x^6}{5\sqrt{4}} + \dots \infty$

(ii)  $\frac{1}{2} + \frac{2}{3}x + \left(\frac{3}{4}\right)^2 x^2 + \left(\frac{4}{5}\right)^3 x^3 + \dots \infty$

2. Prove that  $x^2 = \frac{\pi^2}{3} + 4 \sum_{n=1}^{\infty} (-1)^n \frac{\cos nx}{n^2}$ ,  $-\pi < x < \pi$ .

Hence show that :

$$\sum \frac{1}{n^2} = \frac{\pi^2}{6}.$$

(3-53/8) L-43142

P.T.O.

### Section B

3. Solve :

$$\frac{2x}{y^3} dx + \frac{(y^2 - 3x^2)}{y^4} dy = 0.$$

4. Solve  $x^2 \frac{d^2y}{dx^2} - x \frac{dy}{dx} + y = \log x$  using the method variation of parameter for finding the particular integral.

### Section C

5. Change the order of integration in  $I = \int_0^{4a} \int_{x^2/4a}^{2\sqrt{ax}} dy dx$ .
6. Evaluate  $\iint_D (x+2y) dx dy$ , where D is the region bounded by the parabolas  $y = 2x^2$  and  $y = 1 + x^2$ .

### Section D

7. For the function  $\phi(x, y) = \frac{x}{x^2 + y^2}$ , find the magnitude of the directional derivative along a line making an angle 30 with the positive x-axis at (0, 2).
8. State Green's Theorem for a plane and verify the same for  $\int_C (3x^2 - 8y^2) dx + (4y - 6xy) dy$ , where C is the boundary of the region bounded by  $x \geq 0$ ,  $y \leq 0$  and  $2x - 3y = 6$ .

Roll No. ....

Total Pages : 03

BT-5/D-23

45198

JAVA PROGRAMMING

ES-301A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (a) Elaborate advantage of Java for internet. Give the Structure and type of program in Java.
- (b) Define Class, Method, Object and keyword "this". Show the syntax to define these in java. 8+7=15
2. (a) Write a program to demonstrate the following :
  - (i) To convert lower case string to upper case.
  - (ii) To compare two strings.
- (b) What do you mean by class inheritance ? Write a java program to implement multilevel inheritance concept. 8+7=15

**Unit II**

3. (a) How to add class or interface to a package ? Describe the levels of access protection available for packages.

(3-36/13)L-45198

P.T.O.

(b) How do you define your own exception ? Explain the following terms with respect to exception handling :

(i) try

(ii) catch

(iii) throw

(iv) finally. 8+7=15

4. (a) Describe the need of thread synchronization. How is it achieved in Java ? Write a program to create two threads, one thread will print odd numbers and second thread will print even numbers between 1 to 20 numbers.

(b) Discuss byte and character structure in JAVA. Write a program to implement the operations of random access file. 8+7=15

### Unit III

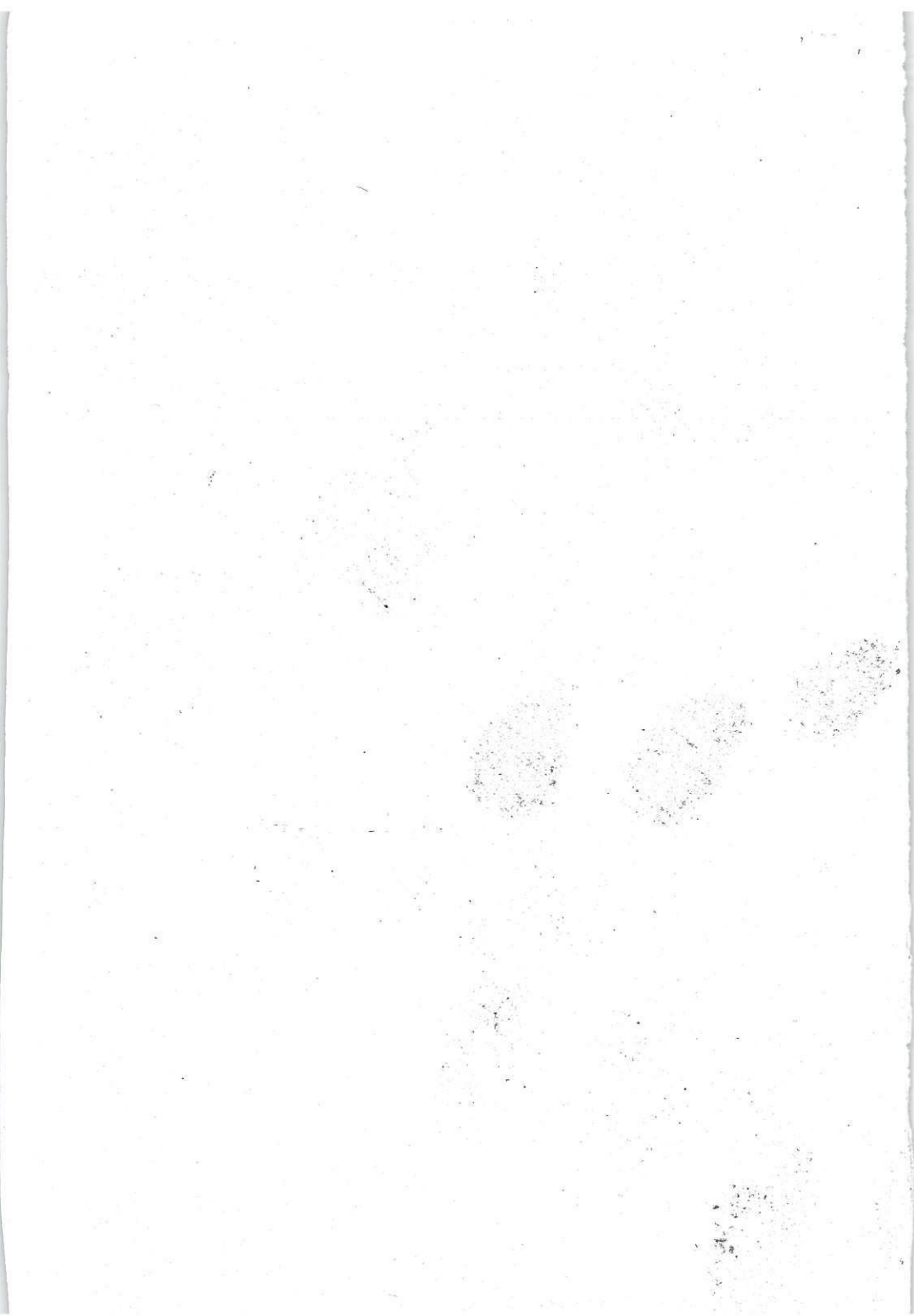
5. Describe Applet life-cycle with diagram. Design an Applet to pass username and password as parameters and check if password contains more than 8 characters. 15

6. (a) Discuss the four types of JDBC driver with suitable diagrams. Elaborate reusing database objects.

(b) Write a java program to develop Login Window using AWT. 8+7=15

#### Unit IV

7. (a) Discuss about Source, Event and Listeners in event handling. How do you use delegation event model ?
- (b) What are Servlets ? Discuss advantages of Servlets in web application development.  $8+7=15$
8. (a) What is HttpServletRequest and HttpServletResponse in Java ? Discuss about page generation.
- (b) Write a note on persistent state capabilities.  $8+7=15$



Roll No. ....

Total Pages : 02

**BT-5/D-23**

**45199**

**INTERNET AND WEB TECHNOLOGY**

**PC-IT-301A**

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (i) Make header diagram of IPv4. Explain the role of each field in IPv6 header. 8
- (ii) Discuss different classes of IP address. 7
2. Explain the layer architecture of OSI model. Differentiate OSI model and TCP/IP model in detail. 15

**Unit II**

3. (i) Explain the working of POP. 7
- (ii) Discuss the working of search engines. 8
4. (i) Define MIME. Explain different types of MIME. 7
- (ii) Discuss the role of various components involved in electronic mail with example. 8

(5-34/6) L-45199

P.T.O.

### Unit III

5. (i) Explain different types of style sheets used in CSS. 8
- (ii) Write HTML code for table consisting of 2 rows and 3 columns. 7
6. (i) Discuss the use of various control statements used in Java script with example. 8
- (ii) Write syntax for CSS padding, element selector, border, lists. 7

### Unit IV

7. (i) Differentiate between privacy and security. Discuss different types of attacks. 7
- (ii) Explain the working of internet information server. 8
8. Write short notes on the following :  $2 \times 7\frac{1}{2} = 15$
- (i) VPN
- (ii) Digital Signature.

Roll No. ....

Total Pages : 03

**BT-5/D-23**

**45200**

COMPUTER GRAPHICS

PC-IT-303A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (a) What are pointing and positioning devices in the context of computer graphics ? Explain using suitable examples. 7
- (b) In two-dimensional graphics, what are the fundamental primitives ? How are they used in graphic rendering ? 8
2. Compare the Digital Differential Analyzer (DDA) and Bresenham's line drawing algorithms. What are their advantages and disadvantages ? 15

(5-34/7) L-45200

P.T.O.

## Unit II

3. (a) What do you mean by clipping ? Explain Cohen-Sutherland line clipping algorithm. 7
- (b) How does the window-to-viewport transformation contribute to the overall viewing process in computer graphics ? 8
4. What is polygon clipping, and why is it essential in computer graphics ? Describe the Sutherland-Hodgman polygon clipping algorithm. 15

## Unit III

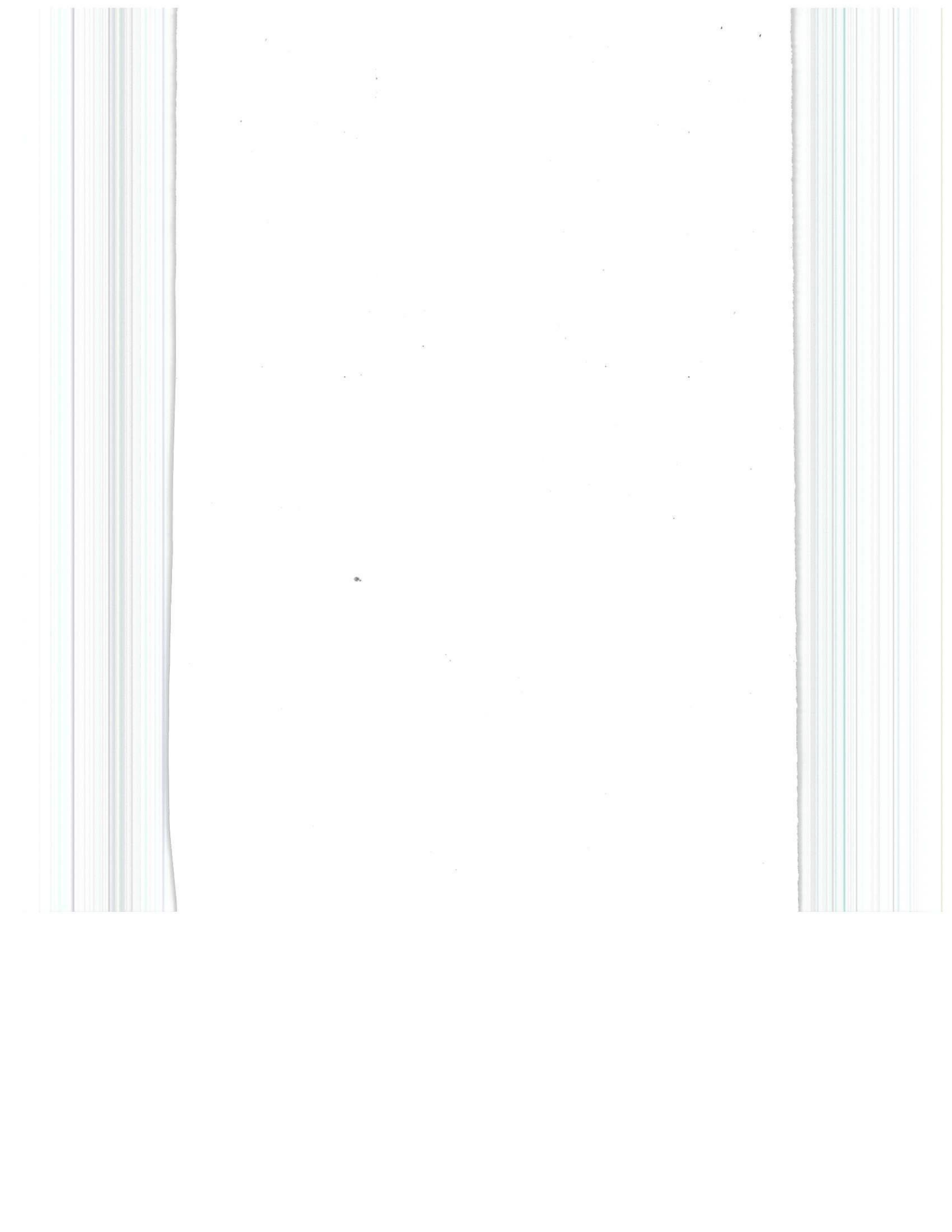
5. (a) Differentiate between parallel and perspective projection. 7
- (b) What are the fundamental principles of raster graphics and how do they differ from vector graphics ? 8
6. Discuss the basic 2D transformations, including translation, scaling and rotation. Provide examples of how these transformations are applied in computer graphics. 15

## Unit IV

7. What is Bezier curve ? What are the properties of Bezier curve ? Differentiate between Bezier curve and B-spline curves. 15

8. What do you mean by hidden surface elimination ? Explain the depth buffer algorithm and how does it work to remove hidden surfaces ? What are its advantages and limitations ?

15



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Total Pages : 03

BT-5/D-23

45201

COMPUTER ORGANIZATION &  
ARCHITECTURE  
PC-IT-305 A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all by selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (a) What is computer architecture ? Explain the store program control concept of computer organization ? 9
- (b) Discuss multilevel viewpoint of a computer using suitable example. 6
2. (a) What is instruction cycle ? Explain 3-stage instruction cycle with a suitable example. 7
- (b) Discuss Flynn's classification of computer architectures and its significance in the context of modern computing ? 8

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## Unit II

3. What is Register Transfer Language ? Explain Bus and Memory transfer operations with suitable example. 15
4. (a) What is microprogram control unit ? Explain its working with suitable example. 8  
(b) Explain arithmetic microoperations and logic microoperations with example. 7

## Unit III

5. (a) What is instruction format ? What are different types of instruction formats ? 8  
(b) Differentiate between RISC & CISC. 7
6. What is addressing mode ? What are the advantages of addressing modes ? Explain different types of addressing modes with suitable examples. 15

## Unit IV

7. What is direct memory access (DMA) ? What are different modes of DMA transfer ? Explain the working diagram of DMA controller. 15

8. Explain the following :

15

- (a) Associate memory
- (b) Cache memory
- (c) Virtual memory

24

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3. gube, 1000 1000 4  
4. gube, 1000 1000 4

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Roll No. ....

Total Pages : 02

**BT-5/D-23**

**45203**

**COMPUTER NETWORKS**

**OE-IT-T-303A**

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**Unit I**

1. (a) What is Bandwidth ? 3  
(b) What is difference between 10 base 2, 10 base5, 10 base T and 100 base FX. 12
2. Draw the layering architecture of OSI model and explain the working of each layer. 15

**Unit II**

3. (a) What is difference between transmission control protocol and user datagram protocol ? 7  
(b) Explain the Address Resolution Protocol and Reverse Address Resolution Protocol. 8
4. Explain the following terms :  
(a) SMTP 3

(5-38/19)L-45203

P.T.O.

- (b) FTP 3
- (c) IP version 6. 9

### Unit III

- 5. Explain the difference between the shielded pair, unshielded pair, coaxial cable and optical fiber cable. 15
- 6. (a) What do you mean by Cyclic Redundancy Check(CRC) and check error in data to be sent 100100 and key is 1101 ? 7
- (b) Explain ALOHA and CSMA/CA in detail. 8

### Unit IV

- 7. What are features of network layer ? Also explain the algorithm of shortest path with the help of example. 15
- 8. Explain the following terms in detail with the help of example : 15
  - (i) Static routing
  - (ii) Dynamic routing
  - (iii) Routing table

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Roll No. ....

Total Pages : 4

BT-7/D-23

47278

## COMPILER DESIGN

Paper-PE-IT-D405A

Time Allowed : 3 Hours]

[Maximum Marks : 75

**Note** : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

### Compulsory Question

1. Answer the following questions in brief :  $5 \times 3 = 15$ 
  - (a) Write down the five properties of compiler.
  - (b) Differentiate Abstract Syntax Tree and DAG representations of Intermediate code.
  - (c) Write the production rules to eliminate the left recursion and left factoring problems?
  - (d) Compare Synthesis and Inherited translation.
  - (e) What are the functions of Error handler?
2. (a) Draw a block diagram of phases of a compiler and identify the main functions of each phase. 7

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P. T. O.

- (b) Construct the NFA for the following regular expressions : 8

$$R = (a + b)^* ab$$

3. (a) What is LALR parser? Construct the set of LR(1) items for following grammar : 8

$$S \rightarrow CC$$

$$C \rightarrow aC$$

$$C \rightarrow d.$$

- (b) What is the use of shift reduces parser? Explain conflicts that may occur during shift-reduce parsing. 7

4. (a) Define a Parser. What is the role of grammars in Parser construction? Construct the Predictive parsing table for the grammar G : 8

$$E \rightarrow E + T \mid T,$$

$$E \rightarrow T * F \mid F,$$

$$F \rightarrow (E) \mid id.$$

- (b) What is DAG and flow graph? Explain their role in compilation process. 7

5. (a) What are different intermediate code forms? Discuss different three address code types and implementations of three Address statements. 8

- (b) What is common sub-expression and how to eliminate it? Explain with example. 7
6. (a) Explain the role of Lexical analysis. Why is buffering used in lexical analysis? 7
- (b) Consider the following program code : 8
- ```
Prod = 0; I = 1;  
Do {Prod = prod + a[i]* b[i];  
I = i + 1;} while (i <= 10);
```
- (i) Partition it into block
- (ii) Construct the flow graph.
7. (a) What is meant by Activation of procedure? How it can be represented with activation tree and record? Explain with quick sort example. 8
- (b) Formulate steps to identify the loops in the basic block. 7
8. (a) Explain the following with example : 6
- (i) Quadruples. (ii) Triples.
- (iii) Indirect triple.
- (b) Consider the following basic block of 3-address instructions : 6
- ```
a := b + c  
x := a + b
```

$b := a - d$

$c := b + c$

$d = a - d$

$y = a - d$

Write the next-use information for each line of the basic block.

(c) Explain Global common sub expression elimination.

3

Roll No. ....

Total Pages : 2

BT-7/D-23

47280

## SOFTWARE PROJECT MANAGEMENT

Paper-PE-IT-D409A

Time Allowed : 3 Hours]

[Maximum Marks : 75

**Note** : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

### UNIT-I

1. Discuss various methods to improve Software economics. 15
2. Discuss various principles of Modern Software Management and usage of these principles in Software Project Management. 15

### UNIT-II

3. (a) Explain various phases involved in lifecycle of software management process. 7  
(b) Write short notes on the following :  $2 \times 4 = 8$   
(i) Pragmatic artifact. (ii) Artifact sets.
4. Explain Model based Software Architecture in detail. 15

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P. T. O.

### UNIT-III

5. Write short notes on the following :  $2 \times 7\frac{1}{2} = 15$
- (a) Iterative process planning.
  - (b) Management indicators.
6. Differentiate Project control and Process instrumentation core metrics. Discuss the role of these metrics in Software Project Management. 15

### UNIT-IV

7. Explain the framework for Project Management and Control in detail. 15
8. (a) Discuss baselines of Software Configuration Management. List different activities involved in SCM. 8
- (b) Define Contract management. Discuss the significance of contract management in Software Project Management. 7

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Total Pages : 2

**BT-7/D-23**

**47283**

**CYBER LAW AND ETHICS**

Paper-OE-IT-401A

Time Allowed : 3 Hours]

[Maximum Marks : 75

**Note** : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

**UNIT-I**

1. Explain the evolution of Computer Technology and how it is related to emergence of Cyber space ? 15
2. How Doctrinal approach is different from Consensual approach and explain the term Cyber Ethics and write some ethics related to cyber space ? 15

**UNIT-II**

3. What is the use of Digital Signature in cyber space and how it is used for making the document safe, explain with the help of example ? 15
4. Explain in detail IT Act 2000 with its limitations and Amendments. 15

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P. T. O.

**UNIT-III**

5. How Copyright is different from Trademark, explain by taking suitable examples ? 15
6. Explain the following terms: 15
  - (a) Alternative dispute resolution
  - (b) Online dispute resolution
  - (c) Patent law.

**UNIT-IV**

7. Explain the term E-Commerce and explain all e-commerce models in detail. 15
8. Illustrate the term Cyber Law its importance and explain the need of Cyber Ethics and write some ethics related to security of data. 15

Roll No. ....

Total Pages : 3

BT-8/D-23

48357

CLOUD COMPUTING

Paper-PE-IT-A404A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

**UNIT-I**

1. (a) Name one popular cloud service provider that offers a range of cloud computing services and briefly describe one of their core services. 08
- (b) What are two benefits and two drawbacks of adopting cloud computing services for Personal use or small businesses? 07
2. (a) What are the key differences between cloud computing, grid computing, and cluster computing? Provide one distinct advantage of each approach in addressing computational needs. 08
- (b) How do open standards play a crucial role in ensuring interoperability and flexibility in cloud computing? Provide one example of an open standard commonly used in the cloud computing industry. 07

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11/1

## UNIT-II

3. (a) Can you briefly explain the differences between public, private, and hybrid cloud models, and provide one scenario where a business might prefer using a hybrid cloud? 08
- (b) How do web services contribute to the functionality and flexibility of cloud computing? Provide one example of a web service commonly used in cloud computing. 07
4. (a) Explain, in simple terms, how cloud computing works and why it is considered a scalable and cost-effective technology solution? 08
- (b) What are the main differences between cloud computing architecture and traditional client-server computing architecture? Provide one advantage of each approach. 07

## UNIT-III

5. (a) What is the purpose of a Service Level Agreement (SLA) in cloud computing, and why is it important for both cloud providers and cloud consumers? 08
- (b) How does cloud computing billing typically work, and why is accurate accounting important for organizations using cloud services? 07
6. (a) Could you provide a brief overview of a real-world use case or example where an organization successfully implemented Microsoft Azure for their cloud computing needs? Highlight one key benefit they achieved. 08

- (b) How does scalability play a key role in cloud services, and why is it beneficial for businesses using cloud computing? 07

#### UNIT-IV

7. (a) What is application-level security in cloud computing, and why is it important for protecting cloud-based applications and data? 08
- (b) What are some common data privacy and security concerns that organizations should address when adopting cloud computing services, and why is it important to mitigate these concerns? 07
8. (a) What is network-level security in cloud computing, and how does it help protect data and applications hosted in the cloud? 08
- (b) What is authentication in cloud security, and why is it a critical component for ensuring the security of cloud-based systems and data? 07
-

1890  
The following is a list of the names of the persons who have been elected to the office of Justice of the Peace for the year 1890.

Wm. H. Smith, J. P. Jones, J. K. Brown, J. L. Green, J. M. White, J. N. Black, J. O. Grey, J. P. Blue, J. Q. Red, J. R. Yellow, J. S. Purple, J. T. Orange, J. U. Pink, J. V. Brown, J. W. Green, J. X. White, J. Y. Black, J. Z. Grey, J. AA. Blue, J. AB. Red, J. AC. Yellow, J. AD. Purple, J. AE. Orange, J. AF. Pink, J. AG. Brown, J. AH. Green, J. AI. White, J. AJ. Black, J. AK. Grey, J. AL. Blue, J. AM. Red, J. AN. Yellow, J. AO. Purple, J. AP. Orange, J. AQ. Pink, J. AR. Brown, J. AS. Green, J. AT. White, J. AU. Black, J. AV. Grey, J. AW. Blue, J. AX. Red, J. AY. Yellow, J. AZ. Purple, J. BA. Orange, J. BB. Pink, J. BC. Brown, J. BD. Green, J. BE. White, J. BF. Black, J. BG. Grey, J. BH. Blue, J. BI. Red, J. BJ. Yellow, J. BK. Purple, J. BL. Orange, J. BM. Pink, J. BN. Brown, J. BO. Green, J. BP. White, J. BQ. Black, J. BR. Grey, J. BS. Blue, J. BT. Red, J. BU. Yellow, J. BV. Purple, J. BW. Orange, J. BX. Pink, J. BY. Brown, J. BZ. Green, J. CA. White, J. CB. Black, J. CC. Grey, J. CD. Blue, J. CE. Red, J. CF. Yellow, J. CG. Purple, J. CH. Orange, J. CI. Pink, J. CJ. Brown, J. CK. Green, J. CL. White, J. CM. Black, J. CN. Grey, J. CO. Blue, J. CP. Red, J. CQ. Yellow, J. CR. Purple, J. CS. Orange, J. CT. Pink, J. CU. Brown, J. CV. Green, J. CW. White, J. CX. Black, J. CY. Grey, J. CZ. Blue, J. DA. Red, J. DB. Yellow, J. DC. Purple, J. DD. Orange, J. DE. Pink, J. DF. Brown, J. DG. Green, J. DH. White, J. DI. Black, J. DJ. Grey, J. DK. Blue, J. DL. Red, J. DM. Yellow, J. DN. Purple, J. DO. Orange, J. DP. Pink, J. DQ. Brown, J. DR. Green, J. DS. White, J. DT. Black, J. DU. Grey, J. DV. Blue, J. DW. Red, J. DX. Yellow, J. DY. Purple, J. DZ. Orange, J. EA. Pink, J. EB. Brown, J. EC. Green, J. ED. White, J. EE. Black, J. EF. Grey, J. EG. Blue, J. EH. Red, J. EI. Yellow, J. EJ. Purple, J. EK. Orange, J. EL. Pink, J. EM. Brown, J. EN. Green, J. EO. White, J. EP. Black, J. EQ. Grey, J. ER. Blue, J. ES. Red, J. ET. Yellow, J. EU. Purple, J. EV. Orange, J. EW. Pink, J. EX. Brown, J. EY. Green, J. EZ. White, J. FA. Black, J. FB. Grey, J. FC. Blue, J. FD. Red, J. FE. Yellow, J. FF. Purple, J. FG. Orange, J. FH. Pink, J. FI. Brown, J. FJ. Green, J. FK. White, J. FL. Black, J. FM. Grey, J. FN. Blue, J. FO. Red, J. FP. Yellow, J. FQ. Purple, J. FR. Orange, J. FS. Pink, J. FT. Brown, J. FU. Green, J. FV. White, J. FW. Black, J. FX. Grey, J. FY. Blue, J. FZ. Red, J. GA. Yellow, J. GB. Purple, J. GC. Orange, J. GD. Pink, J. GE. Brown, J. GF. Green, J. GH. White, J. GI. Black, J. GJ. Grey, J. GK. Blue, J. GL. Red, J. GM. Yellow, J. GN. Purple, J. GO. Orange, J. GP. Pink, J. GQ. Brown, J. GR. Green, J. GS. White, J. GT. Black, J. GU. Grey, J. GV. Blue, J. GW. Red, J. GX. Yellow, J. GY. Purple, J. GZ. Orange, J. HA. Pink, J. HB. Brown, J. HC. Green, J. HD. White, J. HE. Black, J. HF. Grey, J. HG. Blue, J. HH. Red, J. HI. Yellow, J. HJ. Purple, J. HK. Orange, J. HL. Pink, J. HM. Brown, J. HN. Green, J. HO. White, J. HP. Black, J. HQ. Grey, J. HR. Blue, J. HS. Red, J. HT. Yellow, J. HU. Purple, J. HV. Orange, J. HW. Pink, J. HX. Brown, J. HY. Green, J. HZ. White, J. IA. Black, J. IB. Grey, J. IC. Blue, J. ID. Red, J. IE. Yellow, J. IF. Purple, J. IG. Orange, J. IH. Pink, J. II. Brown, J. IJ. Green, J. IK. White, J. IL. Black, J. IM. Grey, J. IN. Blue, J. IO. Red, J. IP. Yellow, J. IQ. Purple, J. IR. Orange, J. IS. Pink, J. IT. Brown, J. IU. Green, J. IV. White, J. IW. Black, J. IX. Grey, J. IY. Blue, J. IZ. Red, J. JA. Yellow, J. JB. Purple, J. JC. Orange, J. JD. Pink, J. JE. Brown, J. JF. Green, J. JG. White, J. JH. Black, J. JI. Grey, J. JJ. Blue, J. JK. Red, J. JL. Yellow, J. JM. Purple, J. JN. Orange, J. JO. Pink, J. JP. Brown, J. JQ. Green, J. JR. White, J. JS. Black, J. JT. Grey, J. JU. Blue, J. JV. Red, J. JX. Yellow, J. JY. Purple, J. JZ. Orange, J. KA. Pink, J. KB. Brown, J. KC. Green, J. KD. White, J. KE. Black, J. KF. Grey, J. KG. Blue, J. KH. Red, J. KI. Yellow, J. KJ. Purple, J. KK. Orange, J. KL. Pink, J. KM. Brown, J. KN. Green, J. KO. White, J. KP. Black, J. KQ. Grey, J. KR. Blue, J. KS. Red, J. KT. Yellow, J. KU. Purple, J. KV. Orange, J. KW. Pink, J. KX. Brown, J. KY. Green, J. KZ. White, J. LA. Black, J. LB. Grey, J. LC. Blue, J. LD. Red, J. LE. Yellow, J. LF. Purple, J. LG. Orange, J. LH. Pink, J. LI. Brown, J. LJ. Green, J. LK. White, J. LL. Black, J. LM. Grey, J. LN. Blue, J. LO. Red, J. LP. Yellow, J. LQ. Purple, J. LR. Orange, J. LS. Pink, J. LT. Brown, J. LU. Green, J. LV. White, J. LW. Black, J. LX. Grey, J. LY. Blue, J. LZ. Red, J. MA. Yellow, J. MB. Purple, J. MC. Orange, J. MD. Pink, J. ME. Brown, J. MF. Green, J. MG. White, J. MH. Black, J. MI. Grey, J. MJ. Blue, J. MK. Red, J. ML. Yellow, J. MN. Purple, J. MO. Orange, J. MP. Pink, J. MQ. Brown, J. MR. Green, J. MS. White, J. MT. Black, J. MU. Grey, J. MV. Blue, J. MW. Red, J. MX. Yellow, J. MY. Purple, J. MZ. Orange, J. NA. Pink, J. NB. Brown, J. NC. Green, J. ND. White, J. NE. Black, J. NF. Grey, J. NG. Blue, J. NH. Red, J. NI. Yellow, J. NJ. Purple, J. NK. Orange, J. NL. Pink, J. NM. Brown, J. NO. Green, J. NP. White, J. NQ. Black, J. NR. Grey, J. NS. Blue, J. NT. Red, J. NU. Yellow, J. NV. Purple, J. NW. Orange, J. NX. Pink, J. NY. Brown, J. NZ. Green, J. OA. White, J. OB. Black, J. OC. Grey, J. OD. Blue, J. OE. Red, J. OF. Yellow, J. OG. Purple, J. OH. Orange, J. OI. Pink, J. OJ. Brown, J. OK. Green, J. OL. White, J. OM. Black, J. ON. Grey, J. OO. Blue, J. OP. Red, J. OQ. Yellow, J. OR. Purple, J. OS. Orange, J. OT. Pink, J. OU. Brown, J. OV. Green, J. OW. White, J. OX. Black, J. OY. Grey, J. OZ. Blue, J. PA. Red, J. PB. Yellow, J. PC. Purple, J. PD. Orange, J. PE. Pink, J. PF. Brown, J. PG. Green, J. PH. White, J. PI. Black, J. PJ. Grey, J. PK. Blue, J. PL. Red, J. PM. Yellow, J. PN. Purple, J. PO. Orange, J. PP. Pink, J. PQ. Brown, J. PR. Green, J. PS. White, J. PT. Black, J. PU. Grey, J. PV. Blue, J. PW. Red, J. PX. Yellow, J. PY. Purple, J. PZ. Orange, J. QA. Pink, J. QB. Brown, J. QC. Green, J. QD. White, J. QE. Black, J. QF. Grey, J. QG. Blue, J. QH. Red, J. QI. Yellow, J. QJ. Purple, J. QK. Orange, J. QL. Pink, J. QM. Brown, J. QN. Green, J. QO. White, J. QP. Black, J. QQ. Grey, J. QR. Blue, J. QS. Red, J. QT. Yellow, J. QU. Purple, J. QV. Orange, J. QW. Pink, J. QX. Brown, J. QY. Green, J. QZ. White, J. RA. Black, J. RB. Grey, J. RC. Blue, J. RD. Red, J. RE. Yellow, J. RF. Purple, J. RG. Orange, J. RH. Pink, J. RI. Brown, J. RJ. Green, J. RK. White, J. RL. Black, J. RM. Grey, J. RN. Blue, J. RO. Red, J. RP. Yellow, J. RQ. Purple, J. RR. Orange, J. RS. Pink, J. RT. Brown, J. RU. Green, J. RV. White, J. RW. Black, J. RX. Grey, J. RY. Blue, J. RZ. Red, J. SA. Yellow, J. SB. Purple, J. SC. Orange, J. SD. Pink, J. SE. Brown, J. SF. Green, J. SG. White, J. SH. Black, J. SI. Grey, J. SJ. Blue, J. SK. Red, J. SL. Yellow, J. SM. Purple, J. SN. Orange, J. SO. Pink, J. SP. Brown, J. SQ. Green, J. SR. White, J. SS. Black, J. ST. Grey, J. SU. Blue, J. SV. Red, J. SW. Yellow, J. SX. Purple, J. SY. Orange, J. SZ. Pink, J. TA. Brown, J. TB. Green, J. TC. White, J. TD. Black, J. TE. Grey, J. TF. Blue, J. TG. Red, J. TH. Yellow, J. TI. Purple, J. TJ. Orange, J. TK. Pink, J. TL. Brown, J. TM. Green, J. TN. White, J. TO. Black, J. TP. Grey, J. TQ. Blue, J. TR. Red, J. TS. Yellow, J. TT. Purple, J. TU. Orange, J. TV. Pink, J. TW. Brown, J. TX. Green, J. TY. White, J. TZ. Black, J. UA. Grey, J. UB. Blue, J. UC. Red, J. UD. Yellow, J. UE. Purple, J. UF. Orange, J. UG. Pink, J. UH. Brown, J. UI. Green, J. UJ. White, J. UK. Black, J. UL. Grey, J. UM. Blue, J. UN. Red, J. UO. Yellow, J. UP. Purple, J. UQ. Orange, J. UR. Pink, J. US. Brown, J. UT. Green, J. UV. White, J. UW. Black, J. UX. Grey, J. UY. Blue, J. UZ. Red, J. VA. Yellow, J. VB. Purple, J. VC. Orange, J. VD. Pink, J. VE. Brown, J. VF. Green, J. VG. White, J. VH. Black, J. VI. Grey, J. VJ. Blue, J. VK. Red, J. VL. Yellow, J. VM. Purple, J. VN. Orange, J. VO. Pink, J. VP. Brown, J. VQ. Green, J. VR. White, J. VS. Black, J. VT. Grey, J. VU. Blue, J. VV. Red, J. VW. Yellow, J. VX. Purple, J. VY. Orange, J. VZ. Pink, J. WA. Brown, J. WB. Green, J. WC. White, J. WD. Black, J. WE. Grey, J. WF. Blue, J. WG. Red, J. WH. Yellow, J. WI. Purple, J. WJ. Orange, J. WK. Pink, J. WL. Brown, J. WM. Green, J. WN. White, J. WO. Black, J. WP. Grey, J. WQ. Blue, J. WR. Red, J. WS. Yellow, J. WT. Purple, J. WU. Orange, J. WV. Pink, J. WX. Brown, J. WY. Green, J. WZ. White, J. XA. Black, J. XB. Grey, J. XC. Blue, J. XD. Red, J. XE. Yellow, J. XF. Purple, J. XG. Orange, J. XH. Pink, J. XI. Brown, J. XJ. Green, J. XK. White, J. XL. Black, J. XM. Grey, J. XN. Blue, J. XO. Red, J. XP. Yellow, J. XQ. Purple, J. XR. Orange, J. XS. Pink, J. XT. Brown, J. XU. Green, J. XV. White, J. XW. Black, J. XY. Grey, J. XZ. Blue, J. YA. Red, J. YB. Yellow, J. YC. Purple, J. YD. Orange, J. YE. Pink, J. YF. Brown, J. YG. Green, J. YH. White, J. YI. Black, J. YJ. Grey, J. YK. Blue, J. YL. Red, J. YM. Yellow, J. YN. Purple, J. YO. Orange, J. YP. Pink, J. YQ. Brown, J. YR. Green, J. YS. White, J. YT. Black, J. YU. Grey, J. YV. Blue, J. YW. Red, J. YX. Yellow, J. YY. Purple, J. YZ. Orange, J. ZA. Pink, J. ZB. Brown, J. ZC. Green, J. ZD. White, J. ZE. Black, J. ZF. Grey, J. ZG. Blue, J. ZH. Red, J. ZI. Yellow, J. ZJ. Purple, J. ZK. Orange, J. ZL. Pink, J. ZM. Brown, J. ZN. Green, J. ZO. White, J. ZP. Black, J. ZQ. Grey, J. ZR. Blue, J. ZS. Red, J. ZT. Yellow, J. ZU. Purple, J. ZV. Orange, J. ZW. Pink, J. ZX. Brown, J. ZY. Green, J. ZZ. White

George Brown

1890

Roll No. ....

Total Pages : 2

**48360**

**BT-8/D-23**

**CYBER SECURITY**

**Paper : OE-IT-402A**

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt any *five* questions. All questions carry equal marks.

1. (a) What is cybercrime. Explain different types of cybercrime?  
(b) List the various cybercrimes against property and against organization.
2. (a) Discuss various types of viruses categorized based on attacks on various elements of the system.  
(b) Explain hacking and list of different types of hackers along with examples.
3. (a) What is mail bombing in cyber crime? How do one can stop bombardment emails?  
(b) What are the steps to be followed for protection against Trojan horse and Backdoors?

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**314** [P.T.O.]

4. (a) Define Cyber Stalking along with its working. Explain two types of Stalkers.  
(b) How to prevent SQL injection attack?
  5. (a) Differentiate between active and passive attacks.  
(b) How do different types of cyber attacks, such as phishing and malware, work?
  6. (a) What do you mean by data security? Explain in terms of archival storage and disposal of data.  
(b) What are the features of firewall? Write the steps in providing network security and to set Firewall Security in windows.
  7. (a) What is the need of digital forensics?  
(b) Explain in detail the forensic analysis of E-mail.
  8. (a) Discuss cybercrime and the Indian ITA 2000.  
(b) Explain the impact of oversights in ITA 2000 regarding digital signatures.
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**48364**

**BT-8/D-23**  
**INFORMATION SECURITY**  
Paper : OE-IT-410A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *five* questions in all, selecting at least *one* question from each unit.

**UNIT-I**

1. (a) Why is Confidentiality an important principle of security? Explain methods to ensure and maintain confidentiality. (8)
- (b) Why are certain attacks labelled as passive, and why are others classified as active? Discuss active attacks. (7)
  
2. (a) What distinguishes a substitution cipher from a transposition cipher? Explore the concept of the Caesar cipher in detail. (8)
- (b) What are Encryption and Decryption? Illustrate these processes with a block diagram depicting plaintext, ciphertext, encryption, and decryption. (7)

**UNIT-II**

3. (a) Differentiate between differential and linear cryptanalysis methods. (5)

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- (b) Discuss the idea of Block Cipher modes with detailed explanation. (10)
- 4. (a) Explain Diffie-Hellman key exchange algorithm using suitable example. (8)
- (b) Discuss the principles of public key crypto systems. (7)

### UNIT-III

- 5. (a) What is the important aspect that establishes trust in Digital Signature? Explain. (8)
- (b) Discuss the idea of Secure Hash Algorithm. (7)
- 6. (a) How does Kerberos works? Explain. (8)
- (b) Discuss the concept of Biometric authentication. (7)

### UNIT-IV

- 7. Write short notes on :
  - (i) Pretty Good Privacy.
  - (ii) S/MIME. (15)
- 8. (a) List the characteristics of a good firewall implementation. How is a circuit gateway different from an application gateway? (8)
- (b) What is Intrusion Detection System? Explain in detail. (7)