

Roll No. ....

**97679**

**BCA 5th Semester  
Examination – December, 2022**

**DATA COMMUNICATION AND NETWORKING**

Paper : BCA-303

Time : Three hours ]

[ Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

**Note :** Attempt *five* questions in all. Question number **1** is **compulsory**. In addition to compulsory question, attempt *four* more questions selecting *one* question from each Unit.

**1. Compulsory Question :**

- (a) Differentiate between topology and protocol.
- (b) State the purpose of layering in network.
- (c) How data can be represented as analog signal ?
- (d) List out various modulation techniques.
- (e) Differentiate between Fast Ethernet and Gigabit Ethernet.

- (f) What is the use of NIC in network ?
- (g) What is Flooding ?
- (h) Discuss various security threats.

#### UNIT - I

- 2. Differentiate OSI and TCP/IP model. Discuss various types of addresses associated with the layers of TCP/IP model.
- 3. Differentiate between centralized and distributed systems. How communication is performed in these two models ?

#### UNIT - II

- 4. (a) Explain various data encoding techniques in brief.
- (b) Compare multilevel, multiple-slot and pulse-stuffed TDMs.
- 5. (a) What is Modulation ? Explain various techniques of modulation.
- (b) What is Switching ? How packet switching is different from message switching ? Explain.

#### UNIT - III

- 6. (a) Compare error detection and error correction. Explain various error detection methods with the help of suitable example.
- (b) Explain the concepts of Token ring and FDDI in brief.

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- 7. (a) Explain the mechanism of sliding window control. Discuss link utilization for this mechanism also.
- (b) Explain various network hardware components with their usage.

#### UNIT - IV

- 8. (a) Differentiate between Link state and Distance vector routing algorithm. How flooding can be minimized ?
- (b) What is Congestion ? Discuss the policies related to congestion and ways of congestion control.
- 9. (a) Differentiate between Virtual circuit and Datagram.
- (b) What is Encryption ? Discuss Public-key algorithms for network security.

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**97680**

**BCA 5th Semester  
Examination – December, 2022**

**VISUAL BASIC**

**Paper : BCA-304**

**Time : Three hours ] [ Maximum Marks : 80**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

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

1. (a) What is Subroutine ?
- (b) How to activate and deactivate the events ?
- (c) What is Dynamic Array ?
- (d) What is Collection
- (e) What is Input Box ?
- (f) How do you declare constant in VB ?
- (g) What is the use of form designer ?
- (h) What is form layout ?

### **UNIT - I**

2. (a) Differentiate Visual and Non-Visual programming language.
- (b) What do you mean by Toolbox and properties windows in VB ? Explain.
3. (a) Differentiate Procedural and Object oriented paradigm.
- (b) Why Visual Basic is called event driven programming language ? Explain.

### **UNIT - II**

4. (a) Explain Relational operator in VB with example.
- (b) What do you mean by Variable ? Explain the scope and declaration of variable used in VB.
5. What is Data Type ? Describe the different data type supported by VB.

### **UNIT - III**

6. Explain various Decision statement with example in VB.
7. (a) What is Array ? How to declare and use the array ? Explain with example.
- (b) Differentiate while wend loop and the do while loop in VB with example.

### **UNIT - IV**

8. (a) What is sub menu ? How to create sub menu ? Explain.
- (b) What do you mean by form ? How to add multiple form in VB ? Explain with example.
9. (a) What is the difference between procedure and function ?
- (b) Explain :
- (i) Load and Unload statement
  - (ii) Show and Hide method

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**BCA 5th Semester  
Examination – December, 2022**

**MANAGEMENT INFORMATION SYSTEM**

**Paper : BCA-301**

**Time : Three Hours ]**

**[ Maximum Marks : 80**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

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

1. (a) What is EDP ?
- (b) What is sub system ?
- (c) What is Informal system ?
- (d) What is level of management ?
- (e) What do you mean by evaluation of MIS ?
- (f) How to analysis information system ?

(g) What is E-Business system ?

(h) Define Functional MIS.

#### UNIT - I

2. (a) What do you mean by system ? Explain different type of system.  
(b) What is information system ? Describe the role of information system in decision making.

3. Explain :

- (i) MIS  
(ii) DSS

#### UNIT - II

4. What is MIS ? What are the characteristics of MIS ?  
Describe framework for MIS.  
5. (a) Explain Simon's model of Decision making.  
(b) Differentiate between Structure and unstructured decision.

#### UNIT - III

6. How to design Management information system ?  
Explain in details.

7. (a) How to evaluate Management Information system ? Explain.  
(b) What is implementation ? How to plan for implementation MIS ?

#### UNIT - IV

8. Discuss the roll of information system in production Management.  
9. (a) What is E-Commerce ? What are the application of E-Commerce.  
(b) Describe how decision support system help in Control ?

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**BCA 5th Semester  
Examination – December, 2022**

**COMPUTER GRAPHICS**

**Paper : BCA-302**

**Time : Three hours ]**

**[ Maximum Marks : 80**

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

**Note :** Question No. 1 is *compulsory*. Attempt *four* questions by selecting *one* question from each Unit. All questions carry equal marks.

1. (a) What is random scan system ?
- (b) What is meant by coordinate systems transformation ?
- (c) What is 2D viewing transformation ?
- (d) What is interactive computer graphics ? State its relevance.
- (e) What are viewing coordinates ? Illustrate.
- (f) What is quadric surface ?

- (g) What is 3D shearing ?  
 (h) Why Bresenham's line algorithm is preferred over DDA line algorithm ?  $2 \times 8 = 16$

#### UNIT - I

2. (a) What do you mean by flood-fill algorithm ? What is its relevance ? Illustrate. 6  
 (b) What steps are required to plot a line whose slope is between 0 and  $30^\circ$  using Bresenham's method ? Indicate which raster locations would be chosen by Bresenham's algorithm when scan-converting a line from screen coordinate (2, 5) to screen coordinate (6, 10). 10

#### 3. Explain the following :

- (a) Ellipse Algorithm 8  
 (b) Plasma Displays 8

#### UNIT - II

4. (a) What is Cyrus-beck Line Clipping algorithm ? Illustrate through a suitable example. 7  
 (b) Find the normalization transformation that maps a window whose lower left corner is at (2, 3) and upper right corner is at (7, 10) onto : 9  
 (i) A viewport that is the entire normalized device screen and  
 (ii) A viewport that has lower left corner at (0, 0) and upper right corner ( $\frac{1}{2}, \frac{1}{2}$ ).

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#### 5. Explain the following :

- (a) 2D Shearing Transformation 8  
 (b) Sutherland-Hodgeman polygon clipping algorithm 8

#### UNIT - III

6. (a) What are polygon-rendering methods ? Which method is most popular ? Justify your answer. 8  
 (b) What are Bezier surfaces ? How are these represented ? Illustrate their relevance in graphics. 8

#### 7. Explain the following :

- (a) Hermite Curve 8  
 (b) Illumination Models 8

#### UNIT - IV

8. (a) What is general projection transform ? How is it significant ? Illustrate. 8  
 (b) What is meant by viewing pipeline ? Illustrate. 8

#### 9. Explain the following :

- (a) 3D Composite Transformations 8  
 (b) 3D Reflection 8

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**97664**

**BCA 1st Semester**

**Examination – December, 2022**

**LOGICAL ORGANIZATION OF COMPUTER - I**

**Paper : BCA-104**

**Time : Three Hours ]**

**[ Maximum Marks : 80**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

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

**1. (a) What is Unicode ?**

**(b) What is Number system ?**

**(c) What is Multiplexer ?**

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**P. T. O.**

(d) Differentiate Encoder and Decoder.

(e) How does a NAND gate works ?

(f) What is Digital signal ?

(g) What is Boolean Function ?

(h) What is Venn diagram ?

### UNIT - I

2. (a) Construct an even parity seven bit hamming code to transmit the data (i) 0100 (ii) 1110.

(b) What is BCD code ? What are the rule for BCD addition ? Explain with suitable example.

3. (a) Perform the following conversions  $(37.125)_{10} = (?)_2 = (?)_8 = (?)_{16}$ .

(b) Add 10110111 and 01110101

(c) Subtract 10001 from 11001.

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### UNIT - II

4. Simplify the following Boolean function  
 $F(A, B, C, D) = \sum(0, 1, 2, 5, 8, 9, 10)$  in SOP. Draw the logic circuit using gates.

5. (a) State and prove De Morgan law.

(b) Simplify the following Boolean expression :

(i)  $ABC'D' + ABC'D + ABCD' + ABCD$

(ii)  $AB(A'BC' + AB'C' + A'BC)$

### UNIT - III

6. (a) How to realize OR, NOT, AND using universal gates ?

(b) What is the design procedure for combinational logic circuit ?

7. (a) What is an exclusive OR and exclusive NOR gate ?  
Draw its symbol and prepare truth table.

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P. T. O.

(b) Explain AND-OR-INVERT and OR-AND-INVERT gate.

#### UNIT - IV

8. (a) What is full adder ? How a full adder is built using half adder ?

(b) What is BCD to seven segment Decoder ? Explain.

9. (a) What are Encoders ? Draw and explain a Octal to binary encoder.

(b) What is full subtractors ? Prepare truth table circuit for full subtractor.

(b) How to realize OR NOT AND gate universally

(d) What is the deadders technique for computation?

Logic Circuits

(b) What is an exclusive OR type excitation NOR gate ?

Draw all symbols and symbols truth table