

Seat No. _____

**MSC_CA_IT (sem-6) Examination
July-2021**

CCCS621 : Web_Application_development_using_PHP

Time : Hours

Total Marks : 100

Q-1(A) Answer the following Questions.

10

- 1 Prove that every connected graph has at least one spanning tree.
- 2 Discuss briefly about issues in distributed system.
- 3 Explain the De Morgan theorems.
- 4 Draw the block diagrams of 16-bit and 32-bit Microcontrollers and compare.
- 5 Discuss formal specification techniques in brief.
- 6 Write mid-point algorithm for drawing an ellipse.
- 7 $E = \{(a,b), (b, a), (a, c), (a, d), (b, c), (d, e)\}$. Draw representation of G. Find the adjacency matrix for G and determine the in-degree and out-degree of each vertex.
- 8 Explain about Bezier Curves.
- 9 Discuss Special Function Registers of 8051.
- 10 List some applications appropriate for each of the display Technology.

Q-1(B) Answer the following Questions.

10

- 1 The process of managing simultaneous operations on the database without having them interfere with one another is
- 2 Write short notes on the following ;
- 3 A table can be logically connected to another table by defining a
- 4 What is paging? Explain how paging hardware can be implemented.
- 5 A collection of data designed to be used by different people is called a/an

Q-2(A) Answer the following Questions.

10

- 1 Explain about Raster scan display.
- 2 derive two dimensional transformation for rotation about an arbitrary point.

Q-2(B) Answer the following Questions.

9

- 1 Explain Weiler Aytherton polygon clipping.
- 2 What are line attributes? Explain with examples.
- 3 Show that rotation about origin in 2-D can be done by three shear transformation.

Q-3(A) Answer the following Questions.**11**

- 1 Explain thread scheduling.
- 2 explain Real time scheduling
- 3 Mention different groups of instruction set of 8086 and explain Data transfer group of instructions with suitable examples.
- 4 The entity integrity rule states that
- 5 Find the coefficient of X^{14} in $(1 + X + X^2 + X^3)^{10}$.
- 6 What is fault tolerance? Explain briefly.
- 7 Explain briefly the contiguous allocation.
- 8 Write about plane equation.
- 9 What are necessary conditions for deadlocks ?
- 10 Derive the matrix for rotation about an arbitrary point in 2-D.
- 11 Write transformation matrices in 2-D for translation and scaling with respect to origin.

Q-3(B) Answer the following Questions.**10**

- 1 Prove that a tree always has one fewer edge than vertices.
- 2 Explain any two CPU scheduling algorithms with examples
- 3 The sum of -6 and -13 using 2's complement addition is,
- 4 How failures are classified?
- 5 Which of the following is an attribute that can uniquely identify a row in a table?

Q-4(A) Answer the following Questions.**10**

- 1 Write short notes on composite transformation
- 2 Write about modelling coordinates, world coordinates, device coordinates and normalized device coordinates.

Q-4(B) Answer the following Questions.**9**

- 1 Write about back-face detection
- 2 What are properties of circles.
- 3 Explain the factors effecting performance of a system. monitoring and managing above factors.

Q-5(A) Answer the following Questions.**11**

- 1 Derive viewing transformation relation.
- 2 Write architecture of a Raster-graphics system with a display processor.
- 3 explain about planning of an organization structure.

- 4 explain Multiple processor scheduling
- 5 Write about back-face detection.
- 6 In a boolean algebra with $< +$ ordering. prove that $a + b$ is the least upper bound of a and b , and ab is the greatest lower bound.
- 7 Explain Sutherland-Hodgeman Polygon Clipping and a note on Weike-Atherton polygon clipping.
- 8 Draw the Timing diagrams for Memory, write operation of 8085 and explain.
- 9 Explain the Basic Logic gates, with logic diagram, logic expression and Truth Table.
- 10 Which of the following hashing techniques does allow a hash file to expand and shrink its number of buckets dynamically without needing a directory?
- 11 Explain Liang-Barsky Line Clipping method . ./ OR

Q-5(B) Answer the following Questions.

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- 1 Explain about different couplings in brief.
- 2 Which of the following is the oldest database model?
- 3 Explain briefly DMA structure.
- 4 Define Euler and Hamiltonian paths.
- 5 Explain Cocomo Model in brief.