(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

FIFTH SEMESTER [BCA] NOVEMBER-DECEMBER 2018

Paper Code: BCA-301 **Subject: Operating systems**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt five questions in all including Q no.1 which is compulsory. Select one question from each unit.

Q1 Answer the following:- **(2.5x10=25)**

(a) Write a short note on Batch System.
(b) Explain semaphores. What happens when the value of semophose is negative?
(c) What is Thrashing? What are possible solutions for this problem?
(d) Mention various CPU scheduling criterias.
(e) What is boot block?
(f) Write a short note on buffering.
(g) Discuss some operations that could be performed on a directory.
(h) Explain Denial of service.
(i) Discuss Swap space management.
(j) What are the necessary conditions for a deadlock to occur?

UNIT-I

Q2 (a) What is fragmentation? What are the various measures to avoid fragmentation? **(4)**
(b) Explain the concept of paging and demand paging. **(6)**
(c) Discuss in detail the process of segmentation. **(2.5)**

Q3 (a) Explain in detail the concept of swapping. **(3.5)**
(b) Consider the reference string: 1,2,3,2,1,5,2,1,6,2,5,6,3,1,3,6,1,2,4,3. If 3 frames are there in memory then how many page faults will be there using following page replacement algorithms: **(9)**
(i) FIFO
(ii) Optimal
(iii) LRU

UNIT-II

Q4 (a) What is critical section? Discuss the requirements that must be satisfied as a solution to critical section problem. **(4)**
(b) Explain Readers-Writers problem in detail. **(4)**
(c) Define process. Explain various states that process undergoes with the help of process state diagram. **(4.5)**

Q5 (a) What are the various operations that could be carried out on a process? **(3)**
(b) Consider the following set of processes, with the length of CPU-burst time given in nanoseconds: **(9.5)**

Process	Arrival Time	Burst Time	Priority
P1	0	21	2
P2	1	3	1
P3	2	6	4
P4	3	2	3

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P1/2

Time Quantum = 2ns.
Prepare a GANTT chart and calculate the average time using FIFO, Round Robin, Priority Scheduling algorithms.

UNIT-III

Q6 Suppose a disk has 201 cylinders, numbered from 0 to 200. The drive is currently serving a request at cylinder 100, and there is queue of disk access requests for cylinders 30, 85, 90, 100, 105, 110, 135, 145. Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all FIFO, SSTF, SCAN, LOOK, C-SACN, C-LOOK algorithms. **(12.5)**

Q7 (a) What are the various ways to recover from deadlock? Explain. **(4.5)**
(b) Write a short note on following:- **(8)**
(i) Dedicated Devices
(ii) Virtual Devices
(iii) Shared Devices
(iv) Storage Devices

UNIT-IV

Q8 (a) Explain various access methods available for accessing a file. **(4.5)**
(b) Write a short note on user authentication. **(8)**

Q9 (a) Explain some basic operations that could be carried on a file. Also specify what information are associated with an open file. **(4)**
(b) Write a short note on various program threats and system threats. **(8.5)**

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] NOVEMBER-DECEMBER 2018

Paper Code: BCA-303 **Subject: Computer Graphics**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt five questions in all including Q no.1 which is compulsory. Select one question from each unit.

Q1 Answer the following questions:- **(2.5x10=25)**

(a) Explain eight-way symmetry of circle.
(b) What is anti-aliasing?
(c) What is the role of video controller in raster scan system?
(d) What are the coordinates of the point P (2, -4) after rotating by 30° about the origin?
(e) Explain the working of color CRT.
(f) Define Homogeneous coordinate system.
(g) Differentiate between Orthographic and Oblique projection.
(h) Briefly explain the concept of Polygon meshes.
(i) What is primitive instancing?
(j) Differentiate between 2D clipping and 3D clipping.

UNIT-I

Q2 (a) Describe Bresenham's line drawing algorithm with its derivation. **(6.5)**
(b) Using Mid-Point circle algorithm draw a quadrant of circle of radius 7 with center (0, 0). **(6)**

Q3 (a) Let R be rectangular window whose lower left-hand corner is at L(-3,1) and upper-right hand corner is at R(2,6). Clip line segment AB with endpoints A(-4,2) and B(-1,7) using Cohn-sutherland algorithm. **(6.5)**
(b) Explain conceptual framework for interactive graphics. **(6)**

UNIT-II

Q4 (a) Perform a 45° rotation of triangle A(0,0), B(1,1), C(5,2) about P(-1,1). **(6.5)**
(b) Explain window-to-viewport transformation. **(6)**

Q5 (a) Prove that two successive 2D scaling are multiplicative in nature, i.e, **(7.5)**

$$S(S_{x1}, S_{y1}).S(S_{x2}, S_{y2}) = S(S_{x1}, S_{x2}, S_{y1}.S_{y2})$$

(b) Explain matrix representation of 3D transformations. **(5)**

UNIT-III

Q6 Explain the following:- **(12.5)**
(a) Boundary representation
(b) Spatial partitioning
(c) CSG
(d) Sweep representation

Q7 (a) State the properties of Beizer curves. Find all blending function for Beizer curve (n=3). **(6.5)**
(b) Describe B-Spline in detail and identify the differences between b-spline and Beizer curve. **(6)**

UNIT-IV

Q8 (a) What do you understand by hidden surface removal. Explain Painter's algorithm. **(6.5)**
(b) Explain various types of parallel projection. **(6)**

Q9 (a) Explain various types of perspective projections. **(6.5)**
(b) Explain Z-buffer method for hidden surface removal. **(6)**

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] NOVEMBER-DECEMBER 2018

Paper Code: BCA-305	***Subject: E-Commerce***
Time: 3 Hours	***Maximum Marks: 75***

Note: Attempt five questions in all including Q.no.1 which is compulsory. Select one question from each unit.

Q1 Attempt **any five** of the following: **(5x5=25)**

(a) Cryptography
(b) SSL and SET.
(c) UNEDIFACT standards.
(d) Types of Security attack.
(e) Web Traffic Analysis.
(f) Payment Gateway.

UNIT-I

Q2 (a) Explain in detail the various steps involved in setting up an E-Commerce Website. **(6.5)**

(b) Draw and explain the various types of Generic Trade Cycle. **(6)**

OR

Q3 (a) "Market is driven by E-Commerce", Comment. Also explain how Traditional Commerce is Different from E-Commerce. **(6)**

(b) What do you understand by EDI? Give its layered architecture. **(6.5)**

UNIT-II

Q4 (a) Discuss various security issues involved in an E-Commerce Transaction. **(6.5)**

(b) How Intranet is different from Extranet. Explain with the help of suitable example. **(6)**

OR

Q5 State the types of electronic payment system and also explain their advantages and disadvantages. **(12.5)**

UNIT-III

Q6 (a) Explain Porter's Five Forces Model. **(6.5)**

(b) What is Supply Chain Management? What are the activities in a Value Chain Model? **(6)**

OR

Q7 (a) Explain Customer Relationship Management (CRM) in detail. **(6)**

(b) Explain various phases involved in Business Process Re-engineering in detail. **(6.5)**

UNIT-IV

Q8 What are the major provisions contained in IT Act-2000, Explain its relevance in current era of information technology. **(12.5)**

OR

Q9 How E-Commerce has contributed in enhancing the governance and building the citizen's satisfaction. Explain taking the case of e-governance. **(12.5)**

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] NOVEMBER-DECEMBER 2018

Paper Code: BCA-307 ***Subject: Software Testing***

Time: 3 Hours ***Maximum Marks: 75***

Note: Attempt five questions in all including Q.No 1 which is compulsory. Select one question from each unit.

(5x5=25)

Q1 Attempt **any five** of the following:-

(a) What is the purpose of software testing? Who should test?
(b) Explain the following terms: Test case, test suite, error, incident, fault and failure.
(c) Differentiate static and dynamic testing.
(d) Explain the V-shaped software life cycle model of testing.
(e) What is Cyclomatic Complexity? Explain with appropriate example.
(f) Differentiate debugging and testing.
(g) Describe cause-effect graphing technique with the help of example.

UNIT-I

Q2 (a) Differentiate structural and functional testing. Give three examples of each. **(4)**
(b) What are the limitations of software testing? Why it is so hard? **(4.5)**
(c) Give some examples of software failures to highlight the importance of testing. **(4)**

Q3 (a) Considering the issues of psychology, identify the set of vital testing principles in software testing. **(7)**
(b) Explain code inspections, walk through and pear review. **(5.5)**

UNIT-II

Q4 Consider a program for classification of triangle. Its input is a triple of positive integers (a,b,c) from interval [1,100]. The output may be one of the following: [Scalene, Isosceles, Equilateral, Not a triangle, invalid input]. Find all du-paths, identify those du-paths that are definition clear (dc.). **(12.5)**

OR

Q5 (a) Draw a neat diagram of a graph and define the following:- **(5)**
i. Degree of nodes
ii. Incidence Matrix
iii. Adjancy Matrix
(b) What is Boundary Value Analysis? Generate test cases using BVA for a program having three inputs, ranges [1-100]. **(7.5)**

UNIT-III

Q6 (a) Graphically illustrate the various levels of testing? Explain integration testing in details. What are stubs and drivers. **(8)**
(b) What is regression testing? When & how it is performed. **(4.5)**

OR

Q7 (a) Explain various debugging approaches of software testing. **(8)**
(b) Differentiate Alpha, beta testing, acceptance testing. **(4.5)**

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UNIT-IV

Q8 Explain the following:-

(a) Draw a flow graph and DD path graph using program that classifies a triangle as: Scalene, Isoceles, Equilateral and Not a triangle. The range for input parameters is 0-100. **(8.5)**

(b) What is slice based testing? Explain. **(4)**

Q9 (a) Discuss the difference between worst test case and adhoc test case performance evaluation by means of testing. **(6.5)**

(c) What is decision table testing? Explain it with the example of largest of three numbers. **(6)**

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