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GAE-674-75 Seat No. 997

B. C. A. (Sem. IV) Examination

March / April – 2017

Course : BCA - 404

1. Operating System (Elective-II)

2. Computer Graphics

Time : 3 Hours] [Total Marks : 70

1. Operating System (Elective-II)

1 (a) Do as directed : 6

(i) Give structure of operating system.

(ii) What is spooling ?

(iii) What is Kernel ?

(iv) What is soft real time system ?

(v) What is system cell ?

(vi) What is multithreading ?

(b) Answer the following : (any two) 12

(i) What is operating system ? Explain the functions of operating system in detail.

(ii) Explain multiprogramming and multitasking operating system.

(iii) Compare : Monolithic and layered system approach of operating system.

2 (a) Do as directed : 5

(i) Define CPU burst.

(ii) Define through put

(iii) Define starvation

(iv) What is context switch ?

(v) Define race condition.

(b) Answer the following : (any three) **12**

(i) Explain PCB.

(ii) Explaion types of schedulers in detail.

(iii) Explain SJF preemptive algorithm with example.

(iv) Explain Round Robin Algorithm with proper example.

3 (a) Do as directed : **6**

(i) Give types of semaphore.

(ii) What is similarities between process and thread ?

(iii) Define critical section.

(iv) Define busy waiting.

(v) List the necessary conditions to occur deadlock.

(vi) What is the use of resource allocation graph?

(b) Answer the following : (any two) **12**

(i) What is deadlock ? Explain deadlock avoidance algorithm and deadlock detection method.

(ii) How semaphore is used to solve the problem of starvation ?

(iii) Explain thread synchronization in detail.

4 (a) Do as directed : **5**

(i) What is MMU ?

(ii) What is PTBR ?

(iii) What is the use of ATU ?

(iv) What is placement policy ?

(v) What is page fault ?

(b) Answer the following : (any three) **12**

(i) What is paging ? Explain paging in detail.

(ii) Give difference between segmentation and fragmentation.

(iii) Explain demand paging in detail.

(iv) Write a short note on TLB.

2. Computer Graphics

1 (a) Do as directed : **6**

(1) Full form : GKS

(2) Define : Persistance

(3) Full form : DVST

(4) Define : Bit Map

(5) What is Aspect Ratio ?

(6) Full form : CRT.

(b) Attempt the following : (any three) **12**

(1) Explain software standard.

(2) List out applications of CG and explain any one.

(3) Differentiate Raster Scan display and Random Scan display

(4) Explain shadow mask method.

2 (a) Do as directed : (any two) **5**

(1) Define : Cell Array

(2) Explain : Gray Scale

(3) Explain : Flood fill algorithm.

(b) Attempt the following : (any three) **12**

(1) Explain DDA Algorithm.

(2) Explain inside-outside test.

(3) Explain circle generation algorithm.

(4) Explain Line Attributes.

3 (a) Do as directed : 6

(1) What is transformation ? List out Basic Geometric transformation in 2-D.

(2) Explain composite transformation.

(3) What is Reflection ?

(b) Attempt the following : (any three) 12

(1) Explain matrix representation and homogeneous coordinate.

(2) Explain the Rotation transformation.

(3) Explain scalling transformation.

(4) Explain shear in detail.

4 (a) Do as directed : (any two) 5

(1) Define window and viewport

(2) Explain point clipping.

(3) What is curve clipping ?

(b) Attempt the following : (any three) 12

(1) Explain Liang-Barsky line clipping algorithm.

(2) Explain polygone clipping.

(3) Explain Text clipping

(4) Explain viewing coordinate reference frame in detail.
