UNIVERSITY OF CALCUTTA

FAKIR CHAND COLLEGE

COMPUTER SCIENCE

B.Sc. SEM-III (Honours) Examination-2022

Paper: CC-5

INTERNAL ASSESSMENT

Full Marks: 30

Answer Q.No.1 and any four from the rest.

1. Answer any four questions: 1.5X4=6
   a) What is cycle stealing in DMA?
   b) What is the memory structure of Vonneuman Architecture?
   c) What is cache coherence problem?
   d) What is the function of PC?
   e) What is hit ratio of Cache memory?
   f) What is micro-instruction?
   g) Draw the three steps of 10 bit instruction format.

2. Explain about instruction cycle. 6
3. Explain about Addressing Mode Techniques. 6
4. Explain about DMA procedure. 6
5. Explain about Cache Mapping Techniques. 6
6. Explain the role of Microprogram Control Unit. 6
7. What are the differences between Hardwired and Vertical micro instruction? 6
8. Explain the role of tristate buffer. 6
9. What is the need of stack-organization in subroutine call? 6

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B.Sc. SEM-III (Honours) Examination-2022

Paper: CC-6

INTERNAL ASSESSMENT

Full Marks: 30

Answer Q.No.1 and any four from the rest.

1. Answer any four questions: 1.5X4=6
   a) What is Isomorphic graph?
   b) What is the complement of a graph?
   c) What is bipartite graph?
   d) What is the convergent rule of Newton Rapson method?
   e) What is Euler graph?
   f) What is Hamiltonian circuit?
   g) What is pendent vertex?

2. Write down the algorithm of Newton Rapson method. 6
3. Write down the algorithm of BFS. 6
4. Write down the algorithm of Dijkstra. 6
5. Write down the algorithm of Gauss elimination method. 6
6. Solve the following equation by Gauss seidal method

   $x_1+x_2+4x_3=9$

   $8x_1-3x_2+2x_3=20$

   $4x_1+11x_2-x_3=33$ 6

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B.SC. (HONOURS) SEMESTER-III, 2022

INTERNAL ASSESSMENT

PAPER – CMSA-CC-3-7

F.M. – 30

(Answer Question ***NO.1*** and any ***FOUR*** from the rest)

1. Answer any ***FOUR*** question: 1.5×4=6
   a) What is Operating System?
   b) Define system calls.
   c) What is a process ?
   d) Distinguish between logical and physical address.
   e) Define kernel.
   f) What is batch processing?
   g) What multiprogramming?

2. Define scheduling algorithm. How many types of scheduling algorithm are there in OS ? 2+ 4
3. Explain process control block with diagram. 6
4. Explain RAG and Wait-for-graph in deadlock. 3 + 3
5. Explain the functions of Operating System . 6
6. Define Semaphore, Critical Section and Race Condition. 2+2+2
7. Explain the characteristics of deadlock. 6
8. Write the Banker's algorithm in deadlock. 6
9. Explain the memory allocation strategies. 6

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B.SC. (HONOURS) SEMESTER-III, 2022

INTERNAL ASSESSMENT

PAPER – CMSA-SEC-A-3-1

F.M. – 30

(Answer Question ***NO.1*** and any ***FOUR*** from the rest)

1. Answer any ***FOUR*** question: 1.5×4=6
   a) What is flickering?
   b) Define resolution.
   c) What is interlacing in computer graphics ?
   d) Define vector scan.
   e) Define raster scan.
   f) What is random scan?
   g) What is clipping?

2. Define pixel. What are the properties of it? 2+ 4
3. Differentiate increased and decreased resolution in graphics. 6
4. Define CRT and explain the components of CRT. 2 + 4
5. Write the DDA algorithm in computer graphics. 6
6. What are the application of computer graphics. 6
7. Write the Bresenham’s algorithm in graphics . 6
8. Write the Cohen-Sutherland Line Clipping Algorithm. 6
9. Distinguish between drawing and painting. 6