This question paper contains 3 printed pages] Roll No. .....

Sl.No.

233

B.C.A. (Part-II)

B.C.A. (Part - II) EXAMINATION, 2017

(Faculty of Science)

(Three-Year Scheme of 10+2+3 Pattern)

Paper-233

OPERATING SYSTEMS

Time : Three Hours] *[Maximum Marks : 100*

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

PART-I
Each question is of 2 marks.
Words limit for the answers is 40 words.

PART - II
Each question is of 4 marks.
Words limit for the answers is 80 words.

PART - III
Each question is of 12 marks.

PART-I

1. Give short answers to the following- [10×2=20]

   a) What do you mean by Operating System?

   b) Discuss the goal of 'Authentication'.

   c) What is 'Multiprogramming System'?

   d) Enlist the various services provided by the Operating System?

   e) What is System Call?

f) Write the definition of Process?

g) Enlist the various states of process.

h) What is 'Thread'?

i) What do you mean by 'Logical Address'?

j) Differentiate between 'File' and 'Directory'.

PART-II

Each Question is of 4 marks. Limit for the answer is 80 words.

2. Discuss various criteria for measuring the performance of scheduling mechanism? [4]

3. Write the method of recovery from deadlock. [4]

4. Explain 'Demand paging' in brief? [4]

5. Discuss the file system in brief. [4]

6. What do you mean by Encryption? Discuss. [4]

PART-III

Each Question is of 12 marks.

7. Discuss 'Process Control Block (PCB)' with the help of proper illustration. Also, explain various types of schedulers. [12]

OR

Explain various preemptive scheduling mechanisms in detail.

8. How can a deadlock situation be avoided? Discuss. [12]

OR

How to detect a 'Deadlock'? Explain.

9. Discuss 'Single Program Partition', 'Fixed-Sized Partitioning' and 'Variable Sized Partition' memory allocation techniques in brief. [12]

OR

Explain various 'Page Replacement Algorithms' in brief with the help of suitable example of each?

10. Discuss strategies of contiguous, linked and indexed allocation in file system. [12]

OR

Explain the various types of directory systems with the help of suitable example of each.

11. How a file can be protected? Discuss various protection mechanisms used for protecting files. [12]

OR

In today's scenario, what kind of security is need in context of Computer System? Discuss various security threats in brief.

This question paper contains 2 printed pages.

B.C.A. (Part - II) Roll No.....

233 Ope. Sys.

B.C.A. (PART II) EXAMINATION - 2018

(Faculty of Science)

(Three-year Scheme of 10 + 2 + 3 Pattern)

Paper - 233

OPERATING SYSTEMS

Time allowed : Three Hours

Maximum Marks : 100

PART - I: Each question is of 2 marks. Words limit for the answers is 40 words.

PART - II: Each question is of 4 marks. Words limit for the answers is 80 words.

PART - III: Each question is of 12 marks.

PART - I

1. Give short answers to the following- [10 x 2 = 20]
   (a) What do you mean by Database Management System?
   (b) Explain Direct Memory Access Buffering.
   (c) Write difference between Serial Processing and Batch Processing.
   (d) Write any two functions of operating system.
   (e) How operating system control I/O management?
   (f) What do you understand by Client-Server structure of operating system?
   (g) Define FCFS.
   (h) Write the definition of Program.
   (i) What is "Scheduler" ?
   (j) Write about Turn Around Time [TAT].

PART - II

2. What is a Process? Describe five state of process. Also illustrate diagram. [4]
3. Write in brief- [1½+1¼+1¼] = [4]
   (i) Long Term Scheduler
   (ii) Short Term Scheduler
   (iii) Medium Term Scheduler
4. What is the difference between non-preemptive and preemptive scheduling? (Min. 3 differences) [2x2] = [4]
5. Explain "Process Synchronization" in brief. [4]
6. What do you mean by Semaphore? Discuss. [4]

PART - III

7. What do you mean by Multi Processor Solution [Bak-erry solution]? Describe all points with complete example. [12]

OR

What is Critical Section Problem? Also describe all possible solutions of Critical Section Problem.

8. What is Thread? Write in detail about life cycle of Thread with Diagram [12]

OR

Write in detail "Banker's Algorithm. Also give an example

9. Differentiate Single Instance Resource type and Multiple Instance Resource Type. Explain method of Deadlock Recovery in brief. [12]

OR

Explain in detail Partition Selection Algorithm Strategies

10. Write in detail about "Paging" with examples. [12]

OR

What is "Thrashing"? Write causes of Thrashing. Give two preventions also.

11. Discuss the "Directory Implementation". Also describe its two methods. [12]

OR

Write short notes on-

(a) Remote Procedure cell

(b) Message Passing

(c) Encryptions

(d) Parallel Processing [Any Two]

This question paper contains 2 printed pages. Roll No. .....

B.C.A. (Pt. -II) **Ope. Sys.**

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B.C.A. (Part-II) EXAMINATION, 2021

(Faculty of Science)

(Three Year Scheme of 10+2+3 Pattern)

OPERATING SYSTEM

Time Allowed : Three Hours Maximum Marks : 100

No supplementary answer-book will be given to any candidate. Hence the candidates should write their answers precisely in the main answer-book only.

All the parts of one question should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

Write your roll number on question paper before start writing answers of questions.

*Question paper consists of **three** parts. **All three** parts are **compulsory**.*

PART - I : *(Very short answer) consists of **10** questions of **two** marks each. Maximum limit for each question is upto **40** words.*

PART - II : *(Short answer) consists of **5** questions of **four** marks each. Maximum limit for each question is upto **80** words.*

PART - III : *(Long answer) consists of **5** questions of **twelve** marks each with an internal choice.*

PART - I

1. (a) Define the terminology of Operating System. **10x2=20**
   (b) Define real time operating system.
   (c) Explain FCFS scheduling.
   (d) Explain the term swapping in memory management.
   (e) Give list of four necessary conditions for deadlock prevention.
   (f) Why the primary memory is essential ?
   (g) Explain fixed partition in memory allocation.
   (h) Define the term relocation in memory management.
   (i) Explain the storage abstraction of sequential file.
   (j) Explain the term Directory in file systems.

PART - II

2. (a) What are interrupts ? How are they handled by the Operating System ? **5x4=20**
   (b) Differentiate between pre-emptive and non pre-emptive scheduling.
   (c) What is Virtual memory and why it is used ?
   (d) Explain the tree structure of directory.
   (e) Explain the role of message passing in Distributed Computing.

PART - III

3. Why an Operating System is needed ? Explain all the functions of Operating System in detail. 12

OR

Explain the types of Operating System in detail. 12

4. What is race condition ? Explain how a critical section avoids this condition. What are the properties which a data item should possess to implement a critical section ? 12

OR

Draw the state diagram of a process from its creation to termination, including all transitions and briefly elaborate every state and every transition. 12

5. Why is segmented paging important as compared to a paging system ? What are the different pieces of the virtual address in a segmented paging ? 12

OR

Explain the differences between : 2x6

(a) Internal and External fragmentation.

(b) Paging and Segmentation.

6. Differentiate between protection and security. Explain the techniques used for protection of user files. 12

OR

What criteria should be adopted for choosing type of file organization ? 12

7. Explain how the Encrypting File System works. Discuss the importance of Encrypting File System. 12

OR

Explain the following in brief : 6+6

(a) Remote Procedure Call (RPC)

(b) Lock Synchronization Mechanism

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