(Pages : 3) D – 3296

Reg. No. : .....

Name : .....

Third Semester B.C.A./B.Sc. Degree Examination, December 2017
Career Related FDP Under CBCSS
(Computer Science/Computer Applications/Physics and Computer Applications)
Core Course : CP 1342/CS 1343/PC 1371 : OPERATING SYSTEMS
(2014 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type) (10×1=10 Marks)

(**One** word to maximum of **one** sentences. Answer **all** questions)

1. Define Bootstrap Program.
2. Expand SCSI.
3. Write an example for Multi-Task Operating System.
4. What is the use of fork ?
5. What is dynamic linking ?
6. Define fragmentation.
7. Write the simple file allocation method.
8. What is DMA ?
9. Define compaction.
10. Define latency.

P.T.O.

SECTION – B (Short Answer Type)

(**Not** to exceed **one** paragraph, answer **any eight** questions. Each **two** marks.)

11. What is Operating System ?

12. What is a process ?

13. What is the use of Scheduler ?

14. What is Context Switch ?

15. What is partition ?

16. What is page table ?

17. What are the two types of file access methods ?

18. Write the file allocation methods.

19. What is hash table ?

20. What is cache ?

21. Define seek time.

22. What are the two types of file access methods ?

SECTION – C (Short Essay) (6x4=

(**Not** to exceed **120** words, answer **any six** questions. **Each** question carries **four** m

23. Differentiate Batch and time sharing system.

24. What are the system call categories ?

25. Write a note on Thread.

6. What are the scheduling criterias ?

7. What are the services of operating system ?

28. Draw a process state diagram and brief.

29. Brief about the process control block.

30. Write a note on Semaphore.

31. Describe the Resource allocation graph.

SECTION – D (Long Essay) (2×15=30

(Answer **any two** questions. **Each** question carries **15** marks)

32. Explain the scheduling algorithms.

33. Discuss about the various memory allocation methods.

34. Explain about page replacement algorithm.

35. Describe the different Disk scheduling methods in detail.

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Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A. Degree Examination, January 2019
Career Related FDP under CBCSS
Group 2(b) – Computer Science/Computer Applications &
Group 2(a) Physics & Computer Applications
Core Course/Vocational
CP 1342/CS 1343/PC 1371
OPERATING SYSTEMS
(2014 Admn. Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very Short Answer Type)

One word to maximum of **one** sentences, answer **all** questions. **(10×1=10 Marks)**

1. How are operating systems designed in general ?
2. What does a time-sharing operating system require ?
3. How is a job different from a process ?
4. Why is the short-term scheduler called as CPU scheduler ?
5. Mention the three requirements to be fulfilled to solve the problem of critical section.
6. When is a set of processes is said to be in a deadlocked state ?
7. Give the use of base and limit registers.
8. Give the difference between physical and logical address space.
9. What is thrashing ?
10. What does boot-control block contain ?

P.T.O.

SECTION – B
(Short Answer Type)

Not to exceed **one** paragraph, answer **any eight** questions. **Each** question carries **two** marks. (8×2=16)

11. Distinguish between real-time operating system and parallel operating system.
12. Define the term : degree of multi-programming.
13. Define CPU burst and I/O burst.
14. Define inter-process communication.
15. Explain mutual exclusion.
16. How do you detect deadlock when there is single instance of each-resource type ?
17. What are the two factors to depend when we invoke deadlock detection algorithm ?
18. Explain roll-out, roll-in swapping policy. What does it require ?
19. Distinguish between global and local page replacement algorithms.
20. List the attributes of a file.
21. How is indexed allocation advantageous than linked allocation ?
22. Give the RAID structure and mention its uses.

SECTION – C
(Short Essay Type)

Not to exceed **120** words, answer **any six** questions. **Each** question carries **four** marks. (6×4=24 Marks)

23. Briefly explain the basic functions of operating systems.
24. Give the importance and contents of process control block.
25. Distinguish between preemptive and non-preemptive scheduling schemes.

26. Describe the Peterson's solution to the problem of critical section.

27. Discuss the importance of Resource Allocation Graph.

28. Explain FIFO page replacement.

29. Explain the direct access method of a file.

30. Explain the problem of external fragmentation in continuous allocation. How is it solved ?

31. List various RAID levels. How do you select a RAID level ?

SECTION – D
(Long Essay Type)

Answer **any two** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. Explain Round-Robin (RR) CPU scheduling algorithm in detail. How is it different from FCFS algorithm ?

33. Explain Banker's algorithm to avoid deadlocks.

34. Explain Paging memory management scheme in detail using diagrams.

35. Describe the common schemes of defining logical structure of a directory.

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Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A Degree Examination, October 2019

Career Related FDP Under CBCSS

Group 2 (b) - COMPUTER SCIENCE/COMPUTER APPLICATIONS

Group 2 (a) – PHYSICS AND COMPUTER APPLICATIONS

Core Course/Vocational Course

CS 1343/CP 1342/PC 1371 OPERATING SYSTEMS

(2014 to 2017 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

(One word to maximum of **one** sentence. Answer **all** questions)

1. What is cache- coherency?.
2. What are the differences between a trap and interrupt?
3. How can we solve the problem of locating an offset within a file?
4. Differentiate UMA and NUMA.
5. Describe dynamic storage allocation problem.
6. What is internal fragmentation?
7. SCAN algorithm is sometimes called elevator algorithm. Why?

P.T.O.

8. What is the purpose of page replacement?

9. Differentiate single threaded and multithreaded process?

10. Which of the following scheduling algorithm could result in starvation?

    (a) first-come, first served

    (b) shortest job first

    (c) round robin

    (d) priority.

(10 x 1

SECTION – B [Short Answer]

Not to exceed **one** paragraph. Answer any **eight** questions. Each questions carries **2** marks

11. What are interprocess communication models?

12. Including the initial parent process, how many processes are created by th program shown below?

```
#include <stdio.h>

#include <unistd.h>

int main()
{
/*fork a child process*/

fork();
/*fork another child process*/
fork();
/*fork another*/
fork();
return 0;
}
```

13. Give a solution to the problem of indefinite blockage of low priority processes.

14. Differentiate:

    (a) text file and source file.

    (b) object file and executable file.

15. Explain the schemes for counting based page replacement.

16. How can we condense the length of the access control list?

17. What are the strategies to select a free hole from the set of available holes in?

18. Explain the requirements for the solution to the critical section problem.

19. Describe short-term, medium-term and long-term scheduling.

20. Why is it important for the scheduler to distinguish i/o bound programs from CPU- bound programs?

21. What you mean by logic bomb?

22. What is the purpose of address binding?

(8 × 2 = 16)

SECTION – C [Short Essay]

Not to exceed **120** words. Answer any **six** questions. Each question carries **4** marks

23. Describe the general methods for passing parameters to the OS.

24. What are the characteristics of deadlock?

25. With neat diagram explain swapping.

26. Describe the actions taken by a kernel to context switch between processes.

S3 BCA (16) supply

27. Explain multithreading models.

28. What is the monitor type ADT?

29. Discuss the tradeoffs involved in directory implementation?

30. What do you mean by thrashing? How to overcome its effects?

31. Show the multithreaded server architecture. What are its benefits multithreaded programming? (6 × 4 = 2

SECTION – D [Long Essay]

Answer any **two** questions. Each question carries **15** marks

32. What is the use of interprocess communication? Explain the fundamer models with necessary diagrams.

33. Explain contiguous memory allocation.

34. How to reduce the number of page faults? Explain with necessary diagrams.

35. Explain the concept of file. Including file operations and access method

(2 × 15 = 3

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Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A. Degree Examination, October 2019

Career Related FDP under CBCSS

Group 2(b) – Computer Science/Computer Applications

Core Course

CS 1343/CP 1342 OPERATING SYSTEMS

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

[Very Short Answer type]

(**One** word to maximum of **one** sentences, Answer **all** questions)

1. Define operating system.
2. Which state of a process is called ready state?
3. What is device queue?
4. What is known as race condition?
5. What is a safe state?
6. What is the use of banker's algorithm?
7. An address generated by the CPU is commonly referred to as

P.T.O.

8. What is worst-fit?

9. What is file seek?

10. What is latency time?

(10 × 1 = 10

SECTION – B

[Short answer]

[Not to exceed **one** paragraph, answer **any eight** questions. Each question c
2 marks]

11. Explain the layered approach to operating system structure.

12. Differentiate the role of long term scheduler and short term scheduler?

13. What is a dispatcher?

14. What is resource-allocation graph?

15. What is starvation?

16. How process termination causes to deadlock recovery?

17. What is the advantage of dynamic loading?

18. Differentiate internal fragmentation and external fragmentation.

19. What is access matrix?

20. What are the operations that can be performed on a directory?

21. What are the advantages of Indexed allocation?

22. How free-space is managed using bit vector implementation?

(8 × 2 = 16 Marks)

SECTION – C

[Short Essay]

[Not to exceed **120** words, answer **any six** questions. Each question carries 4 marks]

23. Explain different operating system services.
24. What are the different categories of system programs?
25. Write a note on process control block.
26. What are the solutions to critical-section problem?
27. Write a note on deadlock detection techniques.
28. Explain swapping in memory management.
29. What is Demand Paging? Discuss its advantages.
30. Explain different file access methods.
31. What is meant by polling?

(6 × 4 = 24 Marks)

SECTION – D

[Long Essay]

[Answer **any two** questions. Each question carries **15** marks]

32. Discuss the following scheduling algorithms with example.
    (a) FCFS scheduling
    (b) Priority scheduling
    (c) Multilevel queue scheduling
33. Describe deadlock prevention strategies in detail.
34. What is segmentation? Explain segmentation architecture in detail.
35. Explain the different disk scheduling algorithms with examples.

(2 × 15 = 30 Marks)