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Reg. No.................................

Name............................

B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2016

Fifth Semester

Core Course—OPERATING SYSTEM

(2013 Admission onwards)

Time : Three Hours

Maximum : 80 Marks

Part A

Answer **all** *questions.*
Each question carries 1 mark.

1. List the components of a computer system.

2. What do you mean by multi-programming ?

3. Define a process.

4. What do you mean by message passing ?

5. What is a socket ?

6. Differentiate between CPU burst time and I/O burst time.

7. Define logical address and physical address.

8. Define dynamic loading.

9. What are overlays ?

10. Define the terms pre-emptive and non-pre-emptive scheduling.

(10 × 1 = 10)

Part B

Answer any **eight** *questions.*
Each question carries 2 marks.

11. What is fragmentation ? What are the two types of fragmentation ?

12. What is swapping ? How is it performed ?

13. Write the structure of a file system.

14. How is free space management performed ?

15. Define the terms safe state, unsafe state and deadlock state.

16. What do you mean by producer consumer problem ?

17. What is a semaphore ? What are the operations on a semaphore ?

Turn over

18. What is race condition ?

19. What is virtual memory ?

20. Write notes on the functions of an operating system.

21. What is swapping ?

22. What is a system call ? What are the different types of system calls ?

(8 × 2 = 16)

Part C

Answer any six questions.
Each question carries 4 marks.

23. What is an operating system ? What are the different types of OS ?

24. What is a process ? What are the components and states of a process ?

25. Write notes on :

    (a) Remote Procedure call.

    (b) Remote Method Invocation.

26. Explain critical section problem and its conditions.

27. What are the classical problems of synchronization ?

28. Explain the different file access methods.

29. Explain in detail demand paging.

30. Explain the working of paging.

31. Explain the conditions for the occurrence of deadlocks.

(6 × 4 = 24)

Part D

Answer any two questions.
Each question carries 15 marks.

32. Explain in detail the different page replacement algorithms.

33. Explain the various CPU scheduling algorithms.

34. Write notes on :

    (a) Inter-process communication.

    (b) Free space management in files.

35. Explain the different deadlock avoidance algorithms.

(2 × 15 = 30)