Total No. of Questions : **11**] [Total No. of Printed Pages : **3**

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B.C.A. (Part-II) Examination, 2023
OPERATING SYSTEM

Paper – BCA-202

Time : 3 Hours] [*Maximum Marks : 70*

Section–A **(Marks : 2 × 10 = 20)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section–B **(Marks : 4 × 5 = 20)**

Note :– Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **4** marks.
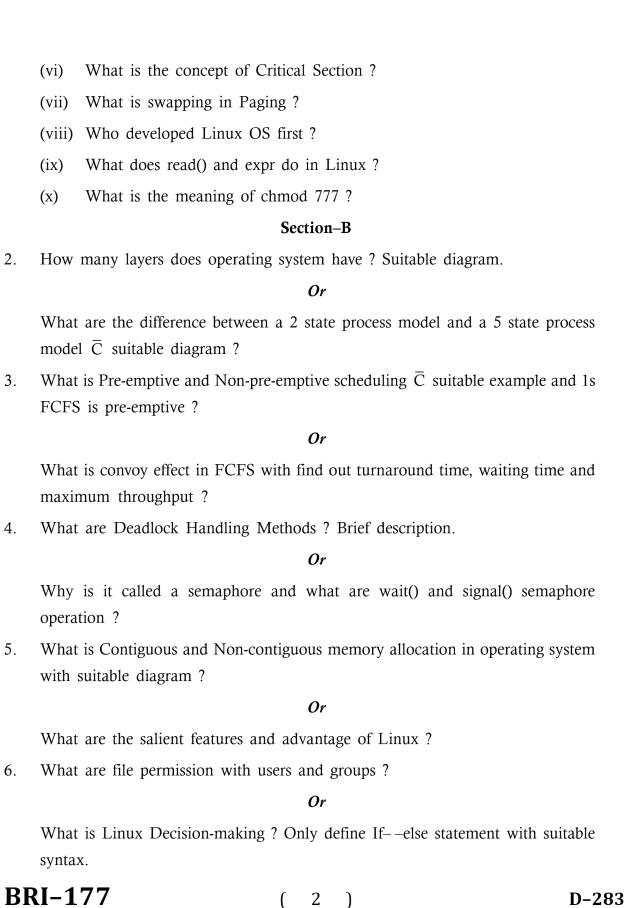
Section–C **(Marks : 10 × 3 = 30)**

Note :– Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section–A

1. (i) What is a operating system in Computer ?

   (ii) Why PCB is used in Operating System ?

   (iii) What is meant by Pre-emptive Scheduling ?

   (iv) What is waiting and response time ?

   (v) What is the necessary condition to avoid deadlock in system ?

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(vi) What is the concept of Critical Section ?

(vii) What is swapping in Paging ?

(viii) Who developed Linux OS first ?

(ix) What does read() and expr do in Linux ?

(x) What is the meaning of chmod 777 ?

Section–B

2. How many layers does operating system have ? Suitable diagram.

Or

What are the difference between a 2 state process model and a 5 state process model $\overline{C}$ suitable diagram ?

3. What is Pre-emptive and Non-pre-emptive scheduling $\overline{C}$ suitable example and 1s FCFS is pre-emptive ?

Or

What is convoy effect in FCFS with find out turnaround time, waiting time and maximum throughput ?

4. What are Deadlock Handling Methods ? Brief description.

Or

Why is it called a semaphore and what are wait() and signal() semaphore operation ?

5. What is Contiguous and Non-contiguous memory allocation in operating system with suitable diagram ?

Or

What are the salient features and advantage of Linux ?

6. What are file permission with users and groups ?

Or

What is Linux Decision-making ? Only define If– –else statement with suitable syntax.

Section–C

7. Explain any *two* of the following :

   (i) System calls

   (ii) Types of schedulers

   (iii) Context switch

   (iv) Functions of operating system

8. Describe the following :

   (i) MLQ with feedback scheduling

   (ii) Shortest job first algorithm

9. Describe Banker's Algorithm.

10. How to implement page replacement technique–FIFO with Belady's anomaly, given preference string using 3 frame to find out page fault ?

   7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1

11. What do you mean by shell script and its variable with the following commands ?

   (i) cat

   (ii) pwd