(2)

Operating System- Sem 3 - Exam Jan 19

P30/P32/CMP255/EE/20190218

Time : 3 Hours **Marks : 80**

Instructions :

1. All Questions are Compulsory.
2. Each Sub-question carry 5 marks.
3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
4. Question paper of 80 Marks, it will be converted in to your programme structure marks.

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1. Solve any **four** sub-questions.

   a) Explain monolithic operating system. 5

   b) Explain different services provided by operating system. 5

   c) Define System calls. Explain its uses. 5

   d) Explain layers of Operating Systems. 5

   e) Define following terms: 5

      i) Assembler

      ii) Machine Cycle

      iii) Interrupt

      iv) ALU

      v) CPU

2. Solve any **four** sub-questions.

   a) Explain process state transition with suitable diagram. 5

   b) Write a short note on process scheduling techniques. 5

   c) Write a short note on Direct Memory Access (DMA). 5

   d) Explain in short what are Device Driver and Device Handler. 5

   e) Write a short note on Context switching and its advantages. 5

3. Solve any **four** sub-questions.

a) What is a Race Condition? Give an example. 5

b) Explain classical IPC problems. 5

c) Explain four necessary conditions for deadlock creation. 5

d) Explain the concept of semaphore to avoid race condition. 5

e) Explain different methods for deadlock prevention. 5

4. Solve any **four** sub-questions.

a) Write a short note on Single contiguous memory management. 5

b) Explain functions of Memory Management Unit. 5

c) Write a short note on Variable/Dynamic partition memory management. 5

d) Explain the importance of Translation Lookaside Buffer (TLB) in paging. 5

e) State whether the following statements are true or false: 5

i) CPU is responsible for generating logical address of memory.

ii) Paging technique is used in virtual memory system.

iii) Multiple partition memory management technique supports multiprogramming.

iv) Fixed partitioning causes internal fragmentation.

v) Segmentation can be combined with paging to increase efficiency of paging.

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