S.D.E. M.C.A. Sem -II: WINTER - 2018 SUBJECT: OPERATING SYSTEMS

Time: 02.00 PM TO 05.00 PM Day: Thursday W-2018-4797 Date: 29/11/2018 Max. Marks: 80 N.B.: 1) Attempt any FIVE questions from section -I and any TWO questions from Section –II. 2) Figures to the right indicate FULL marks. 3) Answers to both the sections should be written in SAME answer book. **SECTION-I Q.1** Define operating system. Explain structures of it with their merits and (10) demerits. **Q.2** Differentiate between: (10)Shortest Remaining time next and shortest job first. i) ii) Memory management with bit map and memory management with linked list. Q.3 Explain the concept of segmentation in detail. (10)What is Semaphore? Discuss busy-wait implementation of semaphore. 0.4 (10)Q.5 Describe security protection mechanisms for file system. (10)**Q.6** Why performance monitoring and evaluation is needed? List various (10)performance measures considered in evaluation of operating system. **O.7** Write short notes on Any **TWO**: (10)a) Interrupt handler **b)** Multiprocessing operating system c) DMA **SECTION-II** What is a deadlock? Give the conditions for occurrence of it. Explain the (15) **Q.8** strategies to avoid it. Operating system resides at the top of the memory, below it 27 K hole, then (15) Q.9 some part of memory in use, below it 23 K hole then some part of memory in use, below is 15K hole, then some part of memory in use, below is 53K hole. System requesting memory for 22 K process. Draw the structure and explain storage strategies in case of: i) First fit ii) Next fit iv) Worst fit iii) Best fit Pages are referred in the following sequence: (15)Q.10 0, 3, 2, 1, 0, 1, 2, 3, 1, 2, 0, 3. Find which page is replaced at the end using LRU with matrix algorithm. Also explain the algorithm in detail.

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