

S.D.E.

B.C.A. (2004 COURSE SEM- III : SUMMER - 2018)
SUBJECT: COMPUTER ARCHITECTURE & OPERATING SYSTEM

Day: **Tuesday**
Date: **29/05/2018**

S-2018-4350

Time: **02.00 PM TO 05.00 PM**
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 **SEPARATE** answer book.

SECTION-I

- Q.1** Differentiate between: (10)
i) Hardwired control unit and microprogrammed control unit
ii) Online operating systems and Real time operating systems
- Q.2** Discuss various addressing modes in detail. Give the example of each. (10)
- Q.3** Explain the concept of serial communication in brief. (10)
- Q.4** Describe various mapping techniques associated with cache memory. (10)
- Q.5** What is process state? Explain various process states in brief. (10)
- Q.6** Discuss memory management with bit map and linked list. (10)
- Q.7** Write short notes on any **TWO** of the following: (10)
a) Monitors
b) Semaphore
c) Address sequencing

SECTION-II

- Q.8** What do you mean by Direct Memory Access? Explain DMA transfer in detail. (15)
- Q.9** Explain procedure consumer problem with bounded buffer in detail. Give possible solutions. (15)
- Q.10** Consider the following case: (15)

Process	In time (am)	execution time (min)
P ₁	10.00	7
P ₂	10.04	3
P ₃	10.07	2
P ₄	10.08	4

Calculate average waiting time and turnaround time in case of:

- i) FCFS
- ii) SJF

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