S.D.E.

M.C.A. SEM - I : SUMMER - 2018

SUBJECT: COMPUTER ORGANISATION AND ARCHITECTURE

Day: **Wednesday** | **S-2018-4604** | Time: **10.00 A.M. TO 1.00 P.M.**
Date: **30/05/2018** | 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 **SEPARATE** answer books.

SECTION-I

Q.1 What is multiplexer? Explain 4 to 1 line multiplexer in detail. **(10)**

Q.2 Explain memory hierarchy with help of diagram in detail. **(10)**

Q.3 Describe interrupt cycle with help of flowchart in brief. **(10)**

Q.4 Discuss various addressing modes with suitable examples. **(10)**

Q.5 Explain asynchronous data transfer with strobe control and handshaking method. **(10)**

Q.6 What is flip flop? Explain types of flip flops with their merits and demerits. **(10)**

Q.7 Write short notes on any **TWO** of the following: **(10)**

a) Input output processor
b) RISC
c) Floating point representation

SECTION-II

Q.8 **a)** Solve the following expression using stack: **(08)**
$[(3+4)+7]*[(3+4+2)*2]$

b) Solve the following: **(07)**
i) Find 2's complement of: 11001100
ii) 10010010 - 01010101

Q.9 **a)** Simplify the following expression using Boolean algebra: **(08)**
i) $(BC'+A'D)(AB'+CD')$
ii) $A'B+ABC'+ABC$

b) Simplify the following Boolean function using K map. **(07)**
$F(A,B,C,D)=\sum(0,1,2,4,5,7,11,15)$

Q.10 **a)** What is sequential circuit? Write the advantages of it over the combinational circuit. **(08)**

b) Write the short note on Logic micro-operation. **(07)**

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