14SSP09

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(Second Semester)

Branch –**SOFTWARE SYSTEMS**
(Five year integrated)

FUNDAMENTALS OF DIGITAL COMPUTERS

Time: Three Hours Maximum: 75 Marks

SECTION -A (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

1 a Write a note on binary codes.

OR

b Express the Boolean function F = A + $B'C$ as a sum of minterms.

2 a Explain the working principle of 4 to 1 line multiplexer with neat diagram.

OR

b Explain the JK flip-flop with logic diagram and characteristic table.

3 a Discuss register transfer.

OR

b Explain the shift micro-operations.

4 a Discuss the general register organization.

OR

b Explain any six addressing modes.

5 a Explain the Input-Output interface.

OR

b Write a note on main memory.

SECTION -B (45 Marks)

Answer any **THREE** questions
ALL questions carry **EQUAL** Marks (3 x 15 = 45)

6 Explain the digital logic gates with logic diagram and truth table.

7 Simplify the following Boolean and express it as (i) sum of products (ii) products of sums :

$$F(A, B, C, D) = \sum(0,2,5,8,9,10)$$

8 Describe arithmetic micro-operations.

9 Describe the Decision Algorithms in Computer Arithmetic.

10 Write in detail about virtual memory.

Z-Z-Z END