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F.Y.B.C.A SEM I, MAY/JUNE SUPPLEMENTARY EXAMINATION 2017
COMPUTER ORGANIZATION AND ARCHITECTURE - (BCA-102)

Duration: 2 Hours

Total Marks: 50

- Instructions:** 1) All Questions are Compulsory.
2) Figures to the right indicate Full Marks.
3) Write your **Seat number** in the space provided on the top of this page.
4) Start each new question on a fresh page

Q.1 Answer the following

Marks (10)

A) Define the following:

Marks (5)

- i) Firmware ii) DIV src iii) Parity
iv) MQ register v) Register addressing mode

B) State true or false for the following statements

Marks (5)

- 1) Micro-programmed control unit is faster compared to the hardwired control unit.
- 2) Sequence logic provides address of micro-programme stored in the control memory.
- 3) Interrupt signal generated upon division by zero is called trap.
- 4) SHL src, count instruction transfers value of LSB to CF and zero to MSB.
- 5) On execution of an instruction ' RCL BX , 04 ' with BX--4425h and CF--1 , the CF is set to 1.

Q.2 Answer the following

Marks (10)

- a) List four features of fourth generation computers (2)
- b) Draw a neat diagram of Von Neuman architecture and explain its working (3)
- c) Solve the following: (5)

Convert (i—iii) as instructed

- i) $(AO7B)_h$ to Octal number ii) $(234)_8$ to decimal number
- iii) $(753)_{10}$ to hexadecimal number
- iv) Subtract decimal number 25 from 72 .Use Binary 1's complement for subtraction.
- v) Subtract decimal number 31 from 89 .Use Binary 2's complement for subtraction.

PTO

Q.3 Answer the following

- a) What is an interrupt? Explain any two types of interrupts.
- b) Explain the key features of any three registers.
- c) With appropriate example explain instruction cycle.

Marks (10)

(2)

(3)

(5)

Q.4 Answer the following

- a) List four functions performed by device controller
- b) Differentiate between programmed I/O and DMA
- c) With a neat block diagram explain the working of ALU.

Marks (10)

(2)

(3)

(5)

Q.5 Answer the following

- a) Write in brief about any four flag registers
- b) With appropriate examples explain any three addressing modes
- c) Write an assembly language programme to find largest of three numbers.

Marks (10)

(2)

(3)

(5)