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F.Y.B.C.A SEM I, MAY/JUNE SUPPLEMENTARY EXAMINATION 2018
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) Access time | ii) Principle of locality | iii) MBR |
| iv) PC register | v) Indirect addressing mode | |

B) State true or false and justify your answers

Marks (5)

- 1) BIOS contains micro-programs called firmware.
- 2) Devices communicate directly with CPU.
- 3) Instruction ' RCR DX , 03 ' with DX—A847h and CF--1 ,on execution sets the CF to 1.
- 4) Every instruction has a micro-program stored in the control memory.
- 5) Interrupt signals cause a control to transfer to a new program or location.

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)
 - i) $(AO7B)_h$ to $(??)_8$ Octal number ii) $(234)_8$ to $(??)_{10}$ iii) $(753)_{10}$ to $(??)_{16}$
 - 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**Marks (10)**

- a) Give two points of differences between static memory and dynamic memory (2)
- b) What is the significance of flag register ? Write in brief about any 4 flag registers. (3)
- c) With appropriate example explain instruction cycle. (5)

Q.4 Answer the following**Marks (10)**

- a) List four functions performed by device controller (2)
- b) Differentiate between programmed I/O and DMA (3)
- c) What is an addressing mode ? Explain any three types of addressing mode. (5)

Q.5 Answer the following**Marks (10)**

- a) If AL—B6h then on execution of ROL AL,02 , what will be the content of AL , CF (2)
- b) List four advantages of learning assembly language (3)
- c) Write an assembly language programme to find smallest of three numbers. (5)