

MA-109

March-2019

B.C.A., Sem.-III

CC-201 : Computer Organization

(New Course)

Time : 2:30 Hours]

[Max. Marks : 70

1. (A) Answer the questions in detail :
- (i) What is digital computer ? Explain in detail. 7
 - (ii) List the different types of flip-flops. Explain JK flip-flop in detail. 7
- OR**
- (i) Explain all the gates in detail. 7
 - (ii) Explain shift register in detail. 7
- (B) Answer the following questions : (any **four**) 4
- (1) List the Universal Gates.
 - (2) In SR flip flop $S = 1$ and $R = 1$ it will produce same output in Q and Q' (True / False)
 - (3) In T flip flop T means what ?
 - (4) _____ is used to convert decimal data to a code such as binary or BCD.
 - (5) The _____ converts a serial data signal at the input to a parallel data.
 - (6) A register store _____ bit information.
2. (A) Answer the questions in detail.
- (i) Convert following No's. 7
 - (I) $(17.85)_{10}$ to $(?)_2$
 - (II) $(451)_8$ to $(?)_2$
 - (III) $(1F0C)_{16}$ to $(?)_8$
 - (ii) Which are the different types of transfer ? Explain three state Buffer and memory transfer in detail. 7
- OR**
- (i) Convert into R's complement $(5690)_{10}$ 7
Binary Subtraction using 2's complement
 - (I) $(1001)-(0100)$
 - (II) $(0110)-(1011)$
 - (ii) Explain binary arithmetic circuit in detail. 7

- (B) Answer the following questions : (any **four**) 4
- (1) Full form of RTL.
 - (2) The operations executed on data store in registers are called.
 - (3) How to define complement micro operation ?
 - (4) Binary incremental is design using _____.
 - (5) How to show Register Transfer in symbolic language ?
 - (6) Error detection use _____ and _____.
3. (A) Answer the questions in detail.
- (i) Explain Common Bus System in detail. 7
 - (ii) Which are the different types of Addressing modes ? Explain all. 7
- OR**
- (i) List and explain the different types of computer registers in detail. 7
 - (ii) Explain instruction cycle in detail. 7
- (B) Answer the following questions : (any **three**) 3
- (1) _____ register is store results from memory and use as a general purpose.
 - (2) Instruction register store OPCODE. (true / false)
 - (3) CLA is register reference instruction. (true / false)
 - (4) In _____ addressing mode value is directly store in register.
 - (5) In stack organization _____ and _____ stacks are used.
4. (A) Answer the questions in detail.
- (i) Explain input output interface and I/O bus in detail. 7
 - (ii) Explain synchronous and asynchronous data transfer. 7
- OR**
- (i) Which are the different modes of I/O data transfer ? Explain DMA in detail. 7
 - (ii) Explain Memory hierarchy in detail. 7
- (B) Answer the following questions : (any **three**) 3
- (1) Data codes and formats in the peripherals differ from the word format in the CPU and memory. (true / false)
 - (2) In _____ I/O mode devices generate interrupt signals to computer.
 - (3) _____ RAM is refreshed every milli seconds.
 - (4) _____ memory is retrieve data by matching some part of content of data.
 - (5) In I/O bus control line is used to issue Status Command. (true / false)
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Seat No. : _____

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B.C.A., Sem.-III

CC-201 : Computer Organization & Advanced Microprocessor (Old Course)

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1. (A) Answer the questions in detail :

- (i) What is Computer organization ? 7
- (ii) Explain device interface signals and I/O driver. 7

OR

- (i) Explain CPU registers in detail. 7
- (ii) Explain RTL with basic symbols and mathematical and logical symbol. 7

(B) Answer the following questions : (any **four**) 4

- (1) All computer system share the same _____ basic architecture.
- (2) List the peripheral devices use as an I/O device.
- (3) CPU states can be divided into two.
- (4) _____ register store last result of processing.
- (5) _____ programming is called Macro-Program.
- (6) Which are the different two types of interrupts ?

2. (A) Answer the questions in detail :

- (i) Explain all the gates in detail. 7
- (ii) Explain JK flip-flop in detail. 7

OR

- (i) Convert into R's complement $(5690)_{10}$ 7
Binary Subtraction using 2's complement
(I) $(1001)-(0100)$
(II) $(0110)-(1011)$
- (ii) Explain Half adder and Full adder in detail. 7

- (B) Answer the following questions : (any **four**) 4
- (1) List the universal gates.
 - (2) In _____ number representation all numbers represented as integer or fraction.
 - (3) In SR flip flop $S=1$ and $R=1$ it will produce same output in Q and Q'.
(true / false)
 - (4) _____ is used to convert decimal data to a code such as binary or BCD.
 - (5) The _____ converts a serial data signal at the input to a parallel data.
 - (6) In T flip-flop T means what ?
3. (A) Answer the questions in detail :
- (i) Classification of Memory, explain functional memory in detail. 7
 - (ii) What is cache memory ? Explain cache principle and cache hit and miss. 7
- OR**
- (i) Explain Memory hierarchy in detail. 7
 - (ii) Explain Cache replacement in detail. 7
- (B) Answer the following questions : (any **three**) 3
- (1) _____ memory is used search method.
 - (2) In _____ memory data is lost when the power is switched off.
 - (3) List the different types of mapping.
 - (4) _____ is used to hold data being written back to main memory.
 - (5) _____ memory is reduce the access time.
4. (A) Answer the questions in detail :
- (i) Explain RISC and SISC processor. 7
 - (ii) Draw and explain PIN diagram of 8086 in minimum mode. 7
- OR**
- (i) Explain scalar, superscalar and vector processor in detail. 7
 - (ii) Explain intel i3 and i5 processor in detail. 7
- (B) Answer the following questions : (any **three**) 3
- (1) Full form of AMD.
 - (2) Full form of SPARC.
 - (3) List 64 bit microprocessors.
 - (4) _____ processors contain several processing elements.
 - (5) List the general purpose registers in 16 bit.