



MF-P-1020

Seat No. _____

M. C. A. (Sem. I) (CBCS) Examination

January - 2018

P1020 : Computer Organization & Architecture

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 (a) Attempt the following objective questions : 4
- (1) Give the full form of LCD.
 - (2) Perform 1's compliment of 10111.
 - (3) Convert hexadecimal number D5 into binary.
 - (4) Give the full form of OBR.
- (b) Attempt any **one** out of two from the following : 2
- (1) Explain touch screen.
 - (2) Explain CD-ROM.
- (c) Attempt any **one** out of two from the following : 3
- (1) Explain plotter and its types.
 - (2) Convert the following into 2's compliment:
 - (i) 1010
 - (ii) 11100
- (d) Attempt any **one** out of two from the following : 5
- (1) Explain processor in detail.
 - (2) Explain number system in detail.
- 2 (a) Attempt the following objective questions : 4
- (1) Divide 1010 by 10
 - (2) Give the full form of K-Map.
 - (3) Give the full form of POS.
 - (4) In K-Map a group of 4 is known as _____.

- (b) Attempt any **one** out of two from the following : **2**
- (1) List out different types of gates. Explain any one.
 - (2) Draw the circuit for $F = XY' + X'Y$
- (c) Attempt any **one** out of two from the following : **3**
- (1) Explain K-Map.
 - (2) Simplify:
 - (i) $(B+BC)(B+B'C)(B+D)$
 - (ii) $AB + AB'$
- (d) Attempt any **one** out of two from the following : **5**
- (1) Explain different postulates of Boolean Algebra.
 - (2) Explain universality of NAND and NOR gates.
- 3** (a) Attempt the following objective questions : **4**
- (1) In virtual memory, address used by a programmer is known as _____.
 - (2) List out the names of volatiles memory.
 - (3) Give the full form of DR.
 - (4) Give the full form of UVEPROM.
- (b) Attempt any **one** out of two from the following: **2**
- (1) Explain non-volatile memory.
 - (2) What is addressing modes?
- (c) Attempt any **one** out of two from the following : **3**
- (1) Explain Register stack organization.
 - (2) Explain cache memory and associative memory.
- (d) Attempt any **one** out of two from the following : **5**
- (1) Explain ALU.
 - (2) Explain memory chip and microprocessor chip.

- 4 (a) Attempt the following objective questions : 4
- (1) _____ is a combinational circuit that converts binary information from n coded inputs to a maximum of 2^n unique output.
 - (2) Which type of IC is used if a device contains 480 gates in a single package?
 - (3) In a universal shift register when $S_1=0$ and $S_1=1$, then what is the operating mode?
 - (4) With additional input line decoder can be used as _____.
- (b) Attempt any **one** out of two from the following : 2
- (1) What is combinational circuit?
 - (2) What is decoder?
- (c) Attempt any **one** out of two from the following : 3
- (1) Explain IC.
 - (2) Explain digital comparator.
- (d) Attempt any **one** out of two from the following : 5
- (1) Explain encoder in detail.
 - (2) Explain half adder and full adder.
- 5 (a) Attempt the following objective questions : 4
- (1) In RS flip flop, $R=1$, $S=1$ than what is the output?
 - (2) A register is a group of _____.
 - (3) Which register can transfer data in 3 different modes?
 - (4) Give the full form of DFF.
- (b) Attempt any **one** out of two from the following : 2
- (1) What is sequential circuit?
 - (2) What is flip flop?
- (c) Attempt any **one** out of two from the following : 3
- (1) Explain ripple counter.
 - (2) Explain RS flip flop.
- (d) Attempt any **one** out of two from the following : 5
- (1) Explain universal registers in detail.
 - (2) What is counter? Explain ring counter.