

B.Sc.(IT) Semester - 2 (CBCS) Examination**June/July-2022 [NEW COURSE]****Computer Organization and Architecture(CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1(A) Answer following questions. (03)
1. List out basic gates.
 2. Truth Table of AND gate.
 3. Full name of SOP.
- Q.1(B) Answer any two. (06)
1. Explain NOR gate with truth table.
 2. Draw the Logic circuit : $A(B+C)+DE+A'B'C+B'D'$.
 3. Define terms:
(A) Truth Table.
(B) Boolean function.
(C) Maxterms.
 4. Explain difference between SOP and POS.
- Q.1(C) Answer any one (05)
1. Explain logic gates with truth table.
 2. Explain Don't care condition with example.
- Q.2(A) Answer following questions (03)
1. Full form of SR Flip – flop.
 2. Definition: Flip – Flop.
 3. What is Full – Adder?
- Q.2(B) Answer any two (06)
1. Explain JK Flip – flop.
 2. Explain Flip – flop Input equation.
 3. Explain State table in detail.
 4. Difference between Gate and Flip – flop.
- Q.2(C) Answer any one (05)
1. Explain Edge – Triggered flip flop.
 2. Explain Full Adder in detail.
- Q.3(A) Answer following questions (03)
1. Full form of SSI.
 2. What is Register?
 3. Full form of IC.
- Q.3(B) Answer any two (06)
1. Explain 4 to 1 line multiplexer.
 2. Explain 2×4 line decoder.
 3. Explain De-Multiplexer: 1 to 4 lines.
 4. Explain Right shift Register.
- Q.3(C) Answer any one (05)
1. Explain register in detail.
 2. Explain 8×3 encoder.
- Q.4(A) Answer following questions (03)
1. Full form of AR.
 2. Define term : ALU.
 3. Full form of IR.

- Q.4(B) Answer any two (06)
1. Explain Register Stack.
 2. Explain Major Components of CPU.
 3. Convert into Infix to Prefix $[A+B - (C*D)] - E$.
 4. Explain accumulator register.
- Q.4(C) Answer any one (05)
1. Explain General Register Organization.
 2. Explain Stack Organization.
- Q.5(A) Answer following questions (03)
1. Full form of DMA.
 2. What is bus?
 3. Full form of ROM.
- Q.5(B) Answer any two (06)
1. Explain Direct Memory Access.
 2. Explain ROM chip block Diagram.
 3. Explain cache memory and Main
 4. Explain I/O interface in detail.
- Q.5(C) Answer any one (05)
1. Explain DMA controller.
 2. Explain IOP in detail.
