

B.C.A 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 the following questions.** (03)
- 1) Full form of ALU
 - 2) Full form of POS
 - 3) Draw the symbol for AND gate
- Q.1(B) **Answer the following question. (Any Two)** (06)
- 1) Draw the Logic circuit for $(A' \cdot B + A \cdot B') + (A \cdot B + A' \cdot B)$
 - 2) List out all the gates and explain any two of them in brief
 - 3) Explain the Block diagram of computer
 - 4) Explain EX-OR and EX-NOR gate in COA
- Q.1(C) **Answer the following question. (Any one)** (05)
- 1) Explain the De-Morgan Rule in brief
 - 2) Execute the the K Map for $\Sigma(W,X,Y,Z)=(0,1,6,7,8,9,14,15)$ with Logic Circuit
- Q.2(A) **Answer the following questions.** (03)
- 1) Full form of JK Flip flop
 - 2) Explain the Combinational Circuit.
 - 3) What do you mean by Clock Pulse?
- Q.2(B) **Answer the following question. (Any Two)** (06)
- 1) Explain the Clock SR Flip flop in brief
 - 2) Explain the Half Subtractor
 - 3) Explain the Full Adder
 - 4) Explain the T Flip Flop
- Q.2(C) **Answer the following question. (Any one)** (05)
- 1) Explain the JK Flip Flop in brief
 - 2) Explain the Full Subtractor in brief
- Q.3(A) **Answer the following questions.** (03)
- 1) List out type of register
 - 2) Full form of VLSI
 - 3) Full Form of IC
- Q.3(B) **Answer the following question. (Any Two)** (06)
- 1) Explain Serial in Serial out and Serial in Parallel out register in brief
 - 2) Explain the 4 bit shifting register in brief
 - 3) Explain the 8 to 3 line Encoder in brief
 - 4) Explain 1 to 4 line De – Multiplexer in brief
- Q.3(C) **Answer the following question. (Any one)** (05)
- 1) Explain 3 to 8 Decoder in brief
 - 2) Explain 4 to 1 Line Multiplexer
- Q.4(A) **Answer the following questions.** (03)
- 1) Full Form of AR in Computer register
 - 2) Full form of CPU
 - 3) Full form of DR in Computer register

- Q.4(B) **Answer the following question. (Any Two)** (06)
- 1) List out types of Computer Register and explain any three of them
 - 2) Convert in Prefix Order $[A+B*C/D]$
 - 3) Define Register Stack
 - 4) Define Polish Notation in brief
- Q.4(C) **Answer the following question. (Any one)** (05)
- 1) Explain the General Register Organization of CPU in brief
 - 2) Explain the Major components of CPU
- Q.5(A) **Answer the following questions.** (03)
- 1) Explain Memory Bus
 - 2) Define Auxiliary Memory
 - 3) Define Cache Memory
- Q.5(B) **Answer the following question. (Any Two)** (06)
- 1) Explain the RAM Chip with block diagram
 - 2) Explain the Block diagram of Computer with IO Processor
 - 3) Explain the ROM Chip with block diagram
 - 4) Explain the Bus Request and Bus Grant Concept
- Q.5(C) **Answer the following question. (Any one)** (05)
- 1) Define DMA Controller in brief
 - 2) Explain I/O Interfaces and Modules in brief
