

B.C.A. (Part-II) Examination, 2019

BCA-201

COMPUTER ORGANIZATION

Time allowed : Three hours

Maximum Marks : 70

श्री जैन (पी.जी.) कॉलेज, बीकानेर

SECTION – A

(Marks : 2 × 10 = 20)

Answer all **ten** questions. (Answer limit **50** words) Each question carries **02** marks.

खण्ड – अ

(अंक : 2 × 10 = 20)

समस्त दस प्रश्नों के उत्तर दीजिए। (उत्तर सीमा **50** शब्द)। प्रत्येक प्रश्न **02** अंक का है।

SECTION – B

(Marks : 4 × 5 = 20)

Answer all **five** questions. Each question has internal choice (Answer limit **200** words).
Each question carries **04** marks.

खण्ड – ब

(अंक : 4 × 5 = 20)

समस्त पाँच प्रश्नों के उत्तर दीजिए। प्रत्येक प्रश्न में विकल्प का चयन करें। (उत्तर सीमा **200** शब्द)। प्रत्येक प्रश्न **04** अंक का है।

SECTION – C

(Marks : 10 × 3 = 30)

Answer any **three** questions out of **five**. (Answer limit **500** words) Each question carries **10** marks.

खण्ड – स

(अंक 10 × 3 = 30)

पाँच में से किन्हीं तीन प्रश्नों के उत्तर दीजिए। (उत्तर सीमा **500** शब्द)। प्रत्येक प्रश्न **10** अंक का है।

SECTION – A

1. Attempt **all** questions. Answer should not exceed **50** words in each question. **(2 × 10 = 20)**

(i) (A) Convert the 43.125 decimal to binary.

(B) $(6B.28)_{16} = ?_g$

(ii) Solve the Boolean function

$F(A, B, C, D) = \Sigma (0, 2, 8, 9, 10, 11, 14, 15)$

In SoP by k maps with logical diagram.

- (iii) Simplify the Boolean expression
 $(A+C) (A + D) (B+C) (B+D)$
- (iv) What is priority interrupt ?
- (v) How we transfer data asynchronous ?
- (vi) What is overflow ?
- (vii) Explain the stack organization.
- (viii) What is virtual memory ?
- (ix) Define Bit and Byte.
- (x) What is Multiplexers ?

SECTION – B

Attempt **all** questions. Answer should not exceed **200** words in each question.

(4 × 5 = 20)

2. Draw and explain logic circuit diagram of encoder and decoder.

OR

What are the differences between circular shift and arithmetic shift ?

3. During execution of instruction, the way the operands are chosen depends on addressing mode of instruction. Which are modes of addressing ? Specify effective address of operand for each addressing mode.

OR

Write short note on DMA.

4. Perform the following arithmetic operation using 2's complement integers.

(1) $35 + (-10)$

(2) $20 - (-4)$

OR

Which are the registers used in basic computer organization ? Write function of each register.

5. What is Multiplexer ? Draw logic diagram and function table of 4-1 line multiplex. How many rows will be there in the truth table describing the 4-1 multiplexer circuit and why ?

OR

(A) Add $(1FFE) + (123A) =$

(B) Write the sum of (i) in binary and give its 2's complement also.

5. What is difference between a direct and indirect address instruction ? How many reference to memory are needed for each type of instruction to bring on operand into a process register ?

OR

What is advantage of interrupt initiated I/O. Differentiate between vectored interrupt and non-vectored interrupt.

SECTION – C

Attempt any **three** questions out of five. Answer should not exceed **500** words in each question. **(10 × 3 = 30)**

7. What is DMA ? How is CPU placed in idle state ? Explain DMA controller through block diagram.
 8. What is Cache Memory ? How does it work ? How its performance measured ? Explain direct mapping of Cache Memory.
 9. Discuss input and output units.
 10. Discuss half Adder and full Adder combinational circuits.
 11. What is program control ? Explain it.
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B.C.A. (Part-II) Examination, 2020
BCA-101
COMPUTER ORGANIZATION

Time allowed : Three hours

Maximum Marks : 70

श्री जैन (पी.जी.) कॉलेज, बीकानेर

SECTION – A

(Marks : 2 × 10 = 20)

Answer all **ten** questions (Answer limit **50** words). Each question carries **2** marks.

खण्ड – अ

(अंक : 2 × 10 = 20)

समस्त दस प्रश्नों के उत्तर दीजिए (उत्तर सीमा **50** शब्द) । प्रत्येक प्रश्न **2** अंक का है ।

SECTION – B

(Marks : 4 × 5 = 20)

Answer all **five** questions. Each question has internal choice (Answer limit **200** words). Each question carries **4** marks.

खण्ड – ब

(अंक : 4 × 5 = 20)

समस्त पाँच प्रश्नों के उत्तर दीजिए । प्रत्येक प्रश्न में विकल्प का चयन करें (उत्तर सीमा **200** शब्द) । प्रत्येक प्रश्न **4** अंक का है ।

SECTION – C

(Marks : 10 × 3 = 30)

Answer any **three** questions out of **five** (Answer limit **500** words). Each question carries **10** marks.

खण्ड – स

(अंक : 10 × 3 = 30)

पाँच में से किन्हीं तीन प्रश्नों के उत्तर दीजिए (उत्तर सीमा **500** शब्द) । प्रत्येक प्रश्न **10** अंक का है ।

SECTION – A

1. Attempt **all** questions. Answer should not exceed **50** words in each question. **(2 × 10 = 20)**

(i) Convert $(63.153)_{10}$ to $(?)_2$

(ii) Solve this $(BCA)_{16} \rightarrow (?)_8$

(iii) Find the 2's complement of the following number $\rightarrow 10110011$.

(iv) Write short notes on J-K Flip-Flop.

(v) What is priority interrupt ?

(vi) Describe Virtual Memory.

(vii) Explain the half adder combination circuit.

(viii) What are stack organization ?

(ix) Explain I/O interface ?

(x) What is Binary Counter ?

SECTION – B

Attempt **all** questions. Answer should not exceed **200** words in each question. **(4 × 5 = 20)**

2. Describe the implementation of Binary Arithmetic operations.

OR

Explain main memory and auxiliary memory.

3. What is multiplexer ? Explain it with diagram.

OR

Differentiate combinational and sequential circuit.

4. Explain the various mode of data transfer.

OR

Briefly explain the techniques use by I/O processor.

5. Explain the various types of Memories.

OR

What is Cache Memory ? Describe the process of writing into cache.

6. What is Program Control ? Explain it.

OR

What is address mode ? Describe the various addressing mode with example.

SECTION - C

Attempt any **three** questions out of **five**. Answer should not exceed **500** words in each question.

(10 × 3 = 30)

7. Describe main memory and explain its architecture.
 8. What are Decoder ? Explain its control through block diagram.
 9. Explain I/O interface with example.
 10. What is associative memory and explain its working.
 11. What are the various modes of data transfer ?
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Total No. of Questions : 11]

[Total No. of Printed Pages : 3

UGP-295

B.C.A. (Part-II) Examination, 2021
श्री जैन (पी.जी.) कॉलेज, बीकानेर

COMPUTER ORGANIZATION

Paper - BCA 201

Time : 1½ Hours]

[Maximum Marks : 70

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit 50 words). Each question carries 2 marks.

Section-B

(Marks : 4 × 5 = 20)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit 200 words). Each question carries 4 marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit 500 words). Each question carries 10 marks.

Section-A

1. Attempt all *ten* questions. Answers should not exceed 50 words in each question.

(i) Define Multiprocessing.

(ii) What is Bus ?

BI-1305

(1)

UGP-295 P.T.O.

- (iii) What is Register ?
- (iv) Define RAM.
- (v) Draw the flow of Instruction Cycle.
- (vi) Suggest about Program Counter.
- (vii) What is Primary Storage Device ?
- (viii) What is Flip Flop ?
- (ix) What is DMA ?
- (x) Give the truth table of X-NOR Gate.

Section-B

Note :- Answer all *five* questions (Answer limit **200** words).

2. Write briefly about computer fundamental system.

Or

Explain Software Interaction.

3. What NAND Gate is called a universal gate ? Justify your answer.

Or

Consider a four variable Boolean function $F = \Sigma (0, 4, 6, 7, 8, 10, 11, 15)$
Minimise this function using K-MAP.

4. Explain the Input/Output Processor.

Or

Explain DMA.

5. Explain the Cash Memory.

Or

Explain the Virtual Memory.

6. Write short notes on the following :

- (a) Stack Organisation
- (b) Register

Or

Explain the Memory Reference Instruction.

Section-C

Note :- Answer any *three* questions out of five (Answer limit **500** words).

- 7. What do you mean by Multiplexer ? Explain the different type of Multiplexer.
- 8. Explain the various modes of Data Transfer Technique.
- 9. Discuss Bit and Byte.
- 10. What is Addressing ? Discuss various addressing modes.
- 11. Discuss Combinational Curcuits.

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BC-283

B.C.A. (Part-II) Examination, 2022

COMPUTER ORGANIZATION

Paper - BCA 201

Time : 3 Hours]

[Maximum Marks : 70

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit 50 words). Each question carries 2 marks.

Section-B

(Marks : 4 × 5 = 20)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit 200 words). Each question carries 4 marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit 500 words). Each question carries 10 marks.

Section-A

1. (i) What are the *six* main components of a computer ?
- (ii) What is Binary Number System ? Convert 151.75 decimal number to binary number.

- (iii) What is Boolean Algebra ?
- (iv) What is Map Simplification ? What is SOP in K-map ?
- (v) What is CPU ?
- (vi) What is Register ? What are the types of register ? Write their names.
- (vii) What is Peripheral Device ? Write names of *ten* peripheral devices.
- (viii) What is I/O Interface ?
- (ix) What is Memory ? What are the types of Computer Memory ?
- (x) What is Virtual Memory ?

Section-B

2. What is 1's complement and 2's complement ? Also write difference between 1's and 2's complements. Convert the decimal number 45 to one's complement.

Or

- (a) Add two binary numbers $10001 + 11101$. Also write rules of binary addition.
- (b) Subtract the binary $101100 - 10010$. Also write rules of binary subtraction.

3. What is half adder circuit ? Also draw half adder circuit diagram and its truth table.

Or

What is flip-flop ? Write difference between SR and JK flip-flop.

4. Explain programmed I/O and DMA.

Or

What is an Interrupt ? How an Interrupt works ? Also write advantages and disadvantages of Interrupt.

5. Explain Memory Hierarchy.

Or

What is Cache Memory ? What are the types of Cache Memory ?

6. Explain addressing mode.

Or

Explain stack organization.

Section-C

7. What is overflow in binary Arithmetic ? What are the overflow condition for addition and subtraction ?

8. Make K-map for 4 variables :

$$F(P, Q, R, S) = \Sigma(0, 2, 5, 7, 8, 10, 13, 15)$$

What will be the minimized Boolean expression ?

9. What is CPU in Computer ? Explain. Also explain program counter.

10. Explain Asynchronous data transfer.

11. Write difference between Primary Memory and Secondary Memory.