D

(Printed Pages 4)

(20221)   Roll No.

BCA-III Sem.

18013

B.C.A. Examination, Dec. - 2020

COMPUTER ARCHITECTURE AND

ASSEMBLY LANGUAGE

(BCA-303)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** sections as per instructions.

Section- A

(Very Short Answer Questions)

Note : Answer **all** the **five** questions. Each question carries equal marks. Very short answer is required not exceeding 75 words.   5×3=15

P.T.O.

1. Define and explain Cache memory.   3

2. Differentiate b/w isolated I/O and memory mapped I/O.   3

3. Define & explain Booth's algorithm.   3

4. Write about Flag register in 8085.   3

5. Write an assembly language program to add two nos. https://www.ccsustudy.com   3

Section - B

(Short Answer Questions)

Note: Attempt any **two** questions. 2×7½=15

6. What are the steps for a simple instruction cycle? Explain Fetch cycle and Indirect cycle using Register transfer language.

7½

18013/2

7. What do you understand by DMA. Explain giving a diagram. 7½

8. Explain Programmed I/O with a flow chart. 7½

Section - C

(Detailed Answer Questions)

Note: Attempt any **three** questions. 3×15=45

9. Discuss various logical instructions, Machine Control Instructions and Program Control Instructions in the Assembly Language. 15

10. (a) List five important characteristics of RISC Architecture. 5

    (b) Differentiate B/W Hardwired Control Unit Vs Micro-programmed Control Unit. 5

    (c) Explain Interrupt Driven I/O in detail. 5

18013/3 P.T.O.

11. (a) What are various data transfer schemes? Briefly discuss each scheme. 5

    (b) Explain the need of different addressing modes by taking suitable examples. 5

    (c) Explain the role of register transfer in computer architecture. 5

12. Discuss the following in brief: 15

    (a) Program loops in Assembly Language

    (b) Operation code

    (c) 8 bit Microprocessor

13. Write short notes on: 15

    (a) Memory Inlufacing Memory.

    (b) Floating point representation

    (c) Architecture of 8085.

18013/4

BCA-III Sem.

18014

B.C.A. Examination, Dec. 2020
Business Economics
(BCA-304)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** Sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all **five** questions. Each question carries 3 marks. Very short answer is required not exceeding **75** words.   3×5=15

1. Define Unemployment

2. Explain Law of Demand

3. Capital Budgeting

P.T.O.

4. Define Firm

5. MNC's

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following **three** questions. Each question carries **7½** marks. Short answer is required not exceeding 200 words.   7½×2=15

6. "Business Economics is the study of behaviour of firms in theory and practice". Discuss.

7. What is meant by Price Elasticity of Demand? Explain any one method for measuring it.

8. What is Trade Cycle? Explain its function.

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each question carries **15** marks. Answer is required in detail.   15×3=45

18014/2

9. What is Perfect Competition. Explain price determination under perfectly competitive equilibrium.

10. What is Fiscal Policy? What are its objectives? Explain its role in the economic development of developing countries.

11. What is Globalisation? Discuss the impact of globalisation on Indian Economy.

12. Enumerate the factors which determine the National Income.

13. Explain and illustrate the difference between Monopoly and Oligopoly, regarding pricing and output.

D   (Printed Pages 4)

(20221)   Roll No. ....

B.C.A.-III Sem.

18012

B.C.A. Examination, Dec.-2020

DATA STRUCTURE USING C AND C++

(BCA-302)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** sections as per instructions.

Section- A

(Very Short Answer Questions)

Note : Attempt **all** questions.   3×5=15

1. Explain the data structure's operations. 3

2. How can we minimize the stack overflow?   3

P.T.O.

3. Write prefix & postfix form for   3

    A+B *(C-D) / (E-F)

4. Design a recursive factorial function using C/C++ language.   3

5. Explain the term Hashing.   3

Section - B

(Short Answer Questions)

Note: Attempt any **two** questions. 2×7½=15

6. Describe the types of sparse matrix. How can we store a 2D sparse matrix in a corresponding single dimensional array? Find the formula for address calculation.   7½

7. Explain D-Queue & priority queue with a suitable example.   7½

8. Write a program in C/C++ to multiply two matrices A & B.   7½

18012/2

Section - C

(Detailed Answer Questions)

Note: Attempt any **three** questions. 3×15=45

9. (a) Perform Quick sort operation on given numbers. **15**

66, 35, 48, 55, 62, 77, 25, 38, 18, 40, 30, 20.

(b) Apply Bubble sort on DATASTRUCTURES.

10. Discuss the programming code in C/C++ language to create, insert & delete the elements in a singly linked list. **15**

11. Explain the properties of B-Trees. Also create a B-Tree of order 3 for following data. **15**

Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec.

12. (a) Create a Heap tree with the following element. **15**

95, 13, 12, 71, 96, 10, 62, 43, 35, 38.

(b) Make a Binary search tree for given data.

14, 15, 4, 9, 7, 18, 3, 5, 16, 4, 20, 17, 9, 14, 5.

13. (a) Design a function CQINSERT for static implementation of circular queue. **15**

(b) Differentiate linear & Binary search with suitable example.

P.T.O.

D

(20221)

B.C.A.-III Sem.

(Printed Pages 4)

Roll No. ....

18015

B.C.A. Examination, Dec.-2020

ELEMENTS OF STATISTICS

(BCA-305)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** the sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all **five** questions.   3×5=15

1. Define the following :
   (i) Frequency curve and frequency Polygon.
   (ii) Assignable and random causes.
   (iii) Equally likely and mutually exclusive events.

2. An average rainfall of a city from Monday to saturday is 0.3 inch. Due to heavy rainfall on sunday, the average rainfall for the week increased to 0.5 inch. What was the rainfall on Sunday?

P.T.O.

3. (I) In how many ways can 3 boys and 3 girls sit in a row if the boys and the girls are each to sit together?
   (II) In how many ways can 3 boys and 3 girls sit in a row if only the boys must sit together?

4. Explain the terms :
   (I) Control limits.
   (II) Tolerance limits.
   (III) Specification limits.

5. Differentiate between variance and coefficient of variation.

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions.

7½×2=15

6. Define probability. Suppose that A and B are mutually exclusive events for which P(A)=0.3 and P(B)=0.5. What is the probability that (a) either A or B occurs (b) A occurs but B does not (c) both A and B occur.

7. Explain the construction and interpretation of mean chart and range chart.

18015/2

8. What is median? Calculate median of the following data :

Class Interval	Frequency
15-25	4
25-35	11
35-45	19
45-55	14
55-65	0
65-75	2

Section-C

(Detailed Answer Questions)

Note : Attempt any three questions.

$15 \times 3 = 45$

9. (a) Explain and illustrate the uses of statistics in commerce and business.

(b) Discuss the steps involved in tabulation and classification of data.

10. What is dispersion? Explain mean deviation, standard deviation and Range with their uses. https://www.ccsustudy.com

11. Describe arithmetic, harmonic and geometric means for grouped and ungrouped data with their limitations.

18015/3

P.T.O.

12. Define process and product control. Discuss the charts for proportion of defectives and number of defects. Obtain control limits of a suitable chart to be used for the following problem.

A survey is conducted to observe defects on TV set from 10 samples (sample size=10) and the results are given below:

Sample No.	No. of defects
1	5
2	4
3	5
4	6
5	4
6	4
7	5
8	6
9	7
10	8

Does any sample show out of control signal?

13. Write short notes on the following :

(a) Statistical Quality Control.

(b) Absolute and relative measure of dispersion.

(c) Frequency distribution and cummulative frequency distribution.

18015/4

D

(20221)

BCA-III Sem.

(Printed Pages 4)

Roll No. ....

18011

B.C.A. Examination, Dec.-2020

Object Oriented Programming

Using C++

(BCA-301)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** Sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each question carries 3 marks. Very short answer is required.   5×3=15

Attempt **all** questions.

1. Define Encapsulation.   3

2. List the features of oops.   3

P.T.O.

3. How do you define member function outside the class? Give example.   3

4. What is abstract class.   3

5. Explain the basic data types in C++ with example.   3

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions.

2×7½=15

6. What do you mean by nesting of classes? Also explain how friend function is important in C++?   7½

7. Explain static data member & Staic data member functions with example.   7½

8. Define polymorphism. What are different methods of implementating polymorphism in C++.   7½

18011/2

Section-C

(Detailed Answer Questions)

Note : Attempt any three questions.

$$3 \times 15 = 45$$

9. (a) Define Inheritance. What are the various types of inheritance? Explain with suitable example. 10

(b) Give the General form of derived class. https://www.ccsustudy.com 5

10. (a) What is File? Write a program to update the contents using random access. 8

(b) Explain the concept of reusability with example. 7

11. Define Functions. What are the advantages of using functions? What are the various methods of parameter passing to the functions? Explain. 15

18011/3 P.T.O.

12. Write short notes on:

(i) Operator overloading 5

(ii) Functions overloading 5

(iii) Name Spaces 5

13. (a) What are the advantages of using new & delete operators as compared to the malloc () & calloc ()? 7½

(b) What is constructor? Explain various types of constructor with example. 7½

18011/4

BCA-III Sem.

18014

B.C.A. Examination, Dec. 2020

Business Economics

(BCA-304)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** Sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all **five** questions. Each question carries 3 marks. Very short answer is required not exceeding **75** words.   3×5=15

1. Define Unemployment

2. Explain Law of Demand

3. Capital Budgeting

P.T.O.

4. Define Firm

5. MNC's

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following **three** questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words.   7½×2=15

6. "Business Economics is the study of behaviour of firms in theory and practice". Discuss.

7. What is meant by Price Elasticity of Demand? Explain any one method for measuring it.

8. What is Trade Cycle? Explain its function.

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each question carries **15** marks. Answer is required in detail.   15×3=45

18014/2

9. What is Perfect Competition. Explain price determination under perfectly competitive equilibrium.

10. What is Fiscal Policy? What are its objectives? Explain its role in the economic development of developing countries.

11. What is Globalisation? Discuss the impact of globalisation on Indian Economy.

12. Enumerate the factors which determine the National Income.

13. Explain and illustrate the difference between Monopoly and Oligopoly, regarding pricing and output.

18014/3

D

(Printed Pages 4)

(20221)   Roll No.

BCA-III Sem.

18013

B.C.A. Examination, Dec. - 2020

COMPUTER ARCHITECTURE AND

ASSEMBLY LANGUAGE

(BCA-303)

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt questions from **all** sections as per instructions.

Section- A

(Very Short Answer Questions)

Note : Answer **all** the **five** questions. Each question carries equal marks. Very short answer is required not exceeding 75 words.   5×3=15

P.T.O.

1. Define and explain Cache memory.   3

2. Differentiate b/w isolated I/O and memory mapped I/O.   3

3. Define & explain Booth's algorithm.   3

4. Write about Flag register in 8085.   3

5. Write an assembly language program to add two nos. https://www.ccsustudy.com   3

Section - B

(Short Answer Questions)

Note: Attempt any **two** questions. 2×7½=15

6. What are the steps for a simple instruction cycle? Explain Fetch cycle and Indirect cycle using Register transfer language.

7½

18013/2

7. What do you understand by DMA. Explain giving a diagram.   7½

8. Explain Programmed I/O with a flow chart.   7½

Section - C

(Detailed Answer Questions)

Note: Attempt any **three** questions. 3×15=45

9. Discuss various logical instructions, Machine Control Instructions and Program Control Instructions in the Assembly Language.   15

10. (a) List five important characteristics of RISC Architecture.   5

    (b) Differentiate B/W Hardwired Control Unit Vs Micro-programmed Control Unit.   5

    (c) Explain Interrupt Driven I/O in detail.   5

11. (a) What are various data transfer schemes? Briefly discuss each scheme.   5

    (b) Explain the need of different addressing modes by taking suitable examples.   5

    (c) Explain the role of register transfer in computer architecture.   5

12. Discuss the following in brief: 15

    (a) Program loops in Assembly Language

    (b) Operation code

    (c) 8 bit Microprocessor

13. Write short notes on: 15

    (a) Memory Inlufacing Memory.

    (b) Floating point representation

    (c) Architecture of 8085.

18013/3   **P.T.O.**

18013/4

D (Printed Pages 4)

(20221) Roll No. ....

B.C.A.-III Sem.

18012

B.C.A. Examination, Dec.-2020

DATA STRUCTURE USING C AND C++

(BCA-302)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from **all** sections as per instructions.

Section- A

(Very Short Answer Questions)

Note : Attempt **all** questions.   3×5=15

1. Explain the data structure's operations. 3

2. How can we minimize the stack overflow?   3

P.T.O.

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3. Write prefix & postfix form for   3

   A+B *(C-D) / (E-F)

4. Design a recursive factorial function using C/C++ language.   3

5. Explain the term Hashing.   3

Section - B

(Short Answer Questions)

Note: Attempt any **two** questions. 2×7½=15

6. Describe the types of sparse matrix. How can we store a 2D sparse matrix in a corresponding single dimensional array? Find the formula for address calculation.   7½

7. Explain D-Queue & priority queue with a suitable example.   7½

8. Write a program in C/C++ to multiply two matrices A & B.   7½

18012/2

Section - C

(Detailed Answer Questions)

Note: Attempt any **three** questions. 3×15=45

9. (a) Perform Quick sort operation on given numbers. **15**

   66, 35, 48, 55, 62, 77, 25, 38, 18, 40, 30, 20.

   (b) Apply Bubble sort on DATASTRUCTURES.

10. Discuss the programming code in C/C++ language to create, insert & delete the elements in a singly linked list. **15**

11. Explain the properties of B-Trees. Also create a B-Tree of order 3 for following data. **15**

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12. (a) Create a Heap tree with the following element. **15**

    95, 13, 12, 71, 96, 10, 62, 43, 35, 38.

    (b) Make a Binary search tree for given data.

    14, 15, 4, 9, 7, 18, 3, 5, 16, 4, 20, 17, 9, 14, 5.

13. (a) Design a function CQINSERT for static implementation of circular queue. **15**

    (b) Differentiate linear & Binary search with suitable example.

P.T.O.

D

(20221)

B.C.A.-III Sem.

(Printed Pages 4)

Roll No. ....

18015

B.C.A. Examination, Dec.-2020

ELEMENTS OF STATISTICS

(BCA-305)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** the sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all **five** questions. $3 \times 5 = 15$

1. Define the following :
   (i) Frequency curve and frequency Polygon.
   (ii) Assignable and random causes.
   (iii) Equally likely and mutually exclusive events.

2. An average rainfall of a city from Monday to saturday is 0.3 inch. Due to heavy rainfall on sunday, the average rainfall for the week increased to 0.5 inch. What was the rainfall on Sunday?

P.T.O.

3. (I) In how many ways can 3 boys and 3 girls sit in a row if the boys and the girls are each to sit together?
   (II) In how many ways can 3 boys and 3 girls sit in a row if only the boys must sit together?

4. Explain the terms :
   (I) Control limits.
   (II) Tolerance limits.
   (III) Specification limits.

5. Differentiate between variance and coefficient of variation.

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions.

$7\frac{1}{2} \times 2 = 15$

6. Define probability. Suppose that A and B are mutually exclusive events for which $P(A) = 0.3$ and $P(B) = 0.5$. What is the probability that (a) either A or B occurs (b) A occurs but B does not (c) both A and B occur.

7. Explain the construction and interpretation of mean chart and range chart.

18015/2

8. What is median? Calculate median of the following data :

Class Interval	Frequency
15-25	4
25-35	11
35-45	19
45-55	14
55-65	0
65-75	2

Section-C
(Detailed Answer Questions)

Note : Attempt any three questions.

$15 \times 3 = 45$

9. (a) Explain and illustrate the uses of statistics in commerce and business.

(b) Discuss the steps involved in tabulation and classification of data.

10. What is dispersion? Explain mean deviation, standard deviation and Range with their uses. https://www.ccsustudy.com

11. Describe arithmetic, harmonic and geometric means for grouped and ungrouped data with their limitations.

18015/3   P.T.O.

12. Define process and product control. Discuss the charts for proportion of defectives and number of defects. Obtain control limits of a suitable chart to be used for the following problem.

A survey is conducted to observe defects on TV set from 10 samples (sample size=10) and the results are given below:

Sample No.	No. of defects
1	5
2	4
3	5
4	6
5	4
6	4
7	5
8	6
9	7
10	8

Does any sample show out of control signal?

13. Write short notes on the following :
    (a) Statistical Quality Control.
    (b) Absolute and relative measure of dispersion.
    (c) Frequency distribution and cummulative frequency distribution.

18015/4

D   (Printed Pages 4)

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BCA-III Sem.

18011

B.C.A. Examination, Dec.-2020

Object Oriented Programming

Using C++

(BCA-301)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** Sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each question carries 3 marks. Very short answer is required.   5×3=15

Attempt **all** questions.

1. Define Encapsulation.   3

2. List the features of oops.   3

P.T.O.

3. How do you define member function out side the class? Give example.   3

4. What is abstract class.   3

5. Explain the basic data types in C++ with example.   3

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions.   2×7½=15

6. What do you mean by nesting of classes? Also explain how friend function is important in C++?   7½

7. Explain static data member & Staic data member functions with example.   7½

8. Define polymorphism. What are different methods of implementating polymorphism in C++.   7½

18011/2

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions.

$3 \times 15 = 45$

9. (a) Define Inheritance. What are the various types of inheritance? Explain with suitable example. **10**

   (b) Give the General form of derived class. https://www.ccsustudy.com **5**

10. (a) What is File? Write a program to update the contents using random access. **8**

    (b) Explain the concept of reusability with example. **7**

11. Define Functions. What are the advantages of using functions? What are the various methods of parameter passing to the functions? Explain. **15**

18011/3   **P.T.O.**

12. Write short notes on:
    (i) Operator overloading   5
    (ii) Functions overloading   5
    (iii) Name Spaces   5

13. (a) What are the advantages of using new & delete operators as compared to the malloc () & calloc ()? **7½**

    (b) What is constructor? Explain various types of constructor with example. **7½**

18011/4