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B.C.A.- III Sem.

# 18015

# B.C.A. Examination, Dec- 2017

## Elements of Statistics

(BCA-305)

(New Course)

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

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

## Section-A

## (Very Short Answer Questions)

**Note :** Attempt all the **five** questions. Each question carries 3 marks. 3×5=15

1. What do you mean by permutation and combination. Explain with examples.
2. Differentiate between the concepts of population and sample.
3. What is the criteria of good measure of central tendency?

P.T.O.





4. Explain the concept of sample space with some examples.
5. Differentiate between process and product control.

## Section-B

## (Short Answer Questions)

**Note :** Attempt any **two** questions. Each question carries 7.5 marks. 7.5×2=15

6. What do you mean by classification? Explain various types of classifications with examples.
7. Define arithmetic mean and median. State their merits and demerits. The mean age of a class of 100 students is 16.2 years. The mean age of girls is 15 years and that of boys is 17 years. Calculate the number of girls and boys in the class.
8. Define (i) Exhaustive events (ii) Mutually exclusive events and (iii) Independent events with examples. A bag contains 6 green, 7 blue and 2 red balls. 3 balls are drawn from it. Find the probability that one green, one blue and one red ball is drawn.

## Section-C

## (Detailed Answer Questions)

**Note :** Attempt any **three** questions. Each question carries 15 marks. $15 \times 3 = 45$

9. Define mode by giving it merits and demerits. Give the steps for its calculation. Find the mode of the following frequency distribution.

| Size (x) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (f) | 3 | 8 | 15 | 23 | 35 | 40 | 32 | 28 | 20 | 45 | 14 | 6 |

10. What do you mean by measure of dispersion? Name various measures of dispersions. For the following data, find the standard, deviation and the coefficient of variation.

| Marks | No. of Students | Marks | No. of Students |
|---|---|---|---|
| 0-10 | 5 | 40-50 | 30 |
| 10-20 | 10 | 50-60 | 20 |
| 20-30 | 20 | 60-70 | 10 |
| 30-40 | 40 | 70-80 | 4 |







11. Define Ogive. Compute the less than and more than ogives and calculate the value of median by graphs for the following frequency distribution.

| Marks | No. of Students | Marks | No. of Students |
|---|---|---|---|
| 0-10 | 04 | 40-50 | 12 |
| 10-20 | 08 | 50-60 | 06 |
| 20-30 | 11 | 60-70 | 05 |
| 30-40 | 15 | 70-80 | 02 |

12. Differentiate between the following with examples-
    (i) Deterministic and non-deterministic experiments.
    (ii) Mathematical and statistical definitions of probability.
    (iii) Union and intersection of two or more events.
13. Differentiate between defects and defective. Discuss the control charts for
    (i) Mean ($\bar{X}$)
    (ii) Range (R)
    (iii) Proportion defective (p) and
    (iv) No, of defects (C)

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# 18014

# B.C.A. Examination, Dec. - 2017

## Business Economics

**(BCA-304)**

**(New)**

*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 questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.

3×5=15

1. Law of demand

**P.T.O.**





2. Fixed cost
3. Return on scale
4. Define trade cycle
5. Explain the term National Income.

## 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. Distinguish between price elasticity and income elasticity of demand.
7. Discuss the various types of inflation.
8. Write a brief note on MNCs.

## Section-C

## (Detailed Answer Questions)

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

9. Define perfect competition. Explain the features of perfect competition.

10. How can you measure the National Income and output of country.

11. Discuss various phase of trade cycle.

12. Define monetary policy. What are the various components of monetary policy.







13. Discuss the difference between the different firms of market.

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# 18013

# B.C.A. Examination, Dec. - 2017

## Computer Architecture and Assembly Language

## (BCA-303)

## (New)

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

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

### Section-A

### (Very Short Answer Questions)

**Note :** Attempt all **five** questions. Each question carries equal marks. Very short answer is required not exceeding 75 words.

5×3=15

1. What is the use of register? Name any two registers.
2. What do you mean by cycle stealing?

P.T.O.



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3. Differentiate between hardwired and micro-programmed controls.
4. Explain in brief, how subroutine call is different from a software interrupt?
5. Discuss the stack organization for processor.

### Section-B

### (Short Answer Questions)

**Note :** Attempt any **two** questions. Each question carries equal marks. Short Answers is required not exceeding 200 words.

2×7.5

1. What are the steps required for a pipelined processor to process the instruction? Draw a pipeline for (A+B*D).
2. Write a program in assembly to subtract number stored at memory location 2001H from the number stored at 2002H. Display the result at 2004H.



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**OR**

What is Booth algorithm? Explain its advantages.

3. What is asynchronous data transfer? How handshaking removes the disadvantage of strobe method?

## Section-C

### (Detailed Answer Questions)

**Note :** Attempt any **three** questions. Each question carries equal marks. Answer is required in detail. 3×15=45

1. Draw and explain the architecture of 8085 Microprocessor along with all its registers and instruction set.
2. What do you mean by addressing modes? Explain various addressing modes with the help of examples.







3. What do you mean by Input-output Processor (IOP)? Explain with the help of block diagram.
4. What do you understand by Instruction Cycle? What are the different phases of instruction cycle?
5. Write short note on:
   (a) RISC/CISC
   (b) Vector Processor
   (c) Array Processor
   (d) Parallel Processor
   (e) DMA

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**B.C.A. - III Sem.**

# 18012
# B.C.A. Examination, Dec.- 2017

**Data Structure Using C and C++**

**(BCA-302)**

**(New Course)**

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

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

## Section-A

## (Very Short Answer Questions)

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

1. How a two-dimensional array is represented in memory?





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2. Discuss the significance of priority queues.
3. How the end-of-list condition will be tested in a circular linked list?
4. Differentiate between preorder and post order tree traversal.
5. What is the concept of merge sorting?

## Section-B

## (Short Answer Questions)

**Note :** Answer any **two** questions out of the following **three** questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words. $7\frac{1}{2} \times 2 = 15$

6. Write a program in C to insert an item of information as the first node in the linked list.
7. What is B-tree? How do you construct the B-tree? Explain with example.
8. What do you mean by linear search? Discuss the complexity of linear search.



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## Section-C

### (Detailed Answer Question)

**Note :** Answer any **three** questions out of the following **five** questions. Each question carries 15 marks. Answer is required in detail. 5×3=45

9. Discuss the following with example:
   (a) Lower triangular matrix
   (b) Upper triangular matrix
   (c) Tridiagonal matrix

10. How a stack is represented in an array? Describe the various application of stacks. Explain prefix, infix and postfix expressions with the help of examples.

11. Write an algorithm to delete the $K^{th}$ node from a two-way linked list. Explain the algorithm by taking an example.



12. What is binary search tree? The following list of letters are inserted into an empty binary search tree:

    J R D G T E M H P A F Q

    (a) Find the final tree T,

    (b) Find the Post-order traversal of T.

13. Write an algorithm for heap sort and implement the algorithm to sort the following numbers:

    42, 32, 52, 22, 77, 66, 88

**18011**

**B.C.A. III Sem.**

**B.C.A. Examination, Dec.-2017**

**OBJECT ORIENTED PROGRAMMING USING C++**

**BCA-301 (New)**

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

**Note :** Attempt all questions 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.

1. Explain the term Class, Object and Abstraction.

2. List the basic difference in C and C++.

3.What is a constructor?

4. Define Overriding.

5. What is Exception handling?

## Section-B

## (Short Answer Questions)

Note : Attempt any two out of the following 3 question Each question carries 7.5 marks. Short answer is required not exceeding 200 words.

6. Write a sample code to show the structure of C++ program code.

7. Explain different types of inheritance with the help of a sample program.

8. Write a program to overload + operator.

## Section-C

## (Detailed Answer Questions)

**Note :** Attempt any three questions out of the following 5 questions. Each question carries 15 marks. Answer is required in detail.

9. (a) What are different types of header files, data types, operators available in C++.

(b) Write a program that does dynamic memory allocation and then free the memory space for any variable.

10. Write a program to show the working of constructors along in inherited classes.

11. (a) Write a program to overload unary addition operator.

(b) Differentiate between operator overloading and operator overriding.

12. Write a program to show the use of friend functions.

13. Write short notes on the following:

(i) Parametric Polymorphism (ii) Garbage collection (ii) Exception Handling (iv) Generic Classes