

E 6184

(Pages : 2)

Reg. No.....

Name.....

B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2018

First Semester

Core Course – INTRODUCTION TO COMPUTERS

(2013 to 2016 Admissions)

Time : Three Hours

Maximum Marks : 80

Part A

Answer **all** questions.

1 mark each.

1. Compare Computer hardware and Computer software.
2. What is meant by byte?
3. List the variants of Mouse.
4. What are modifier keys in a keyboard?
5. List the factors that affect the speed of a computer.
6. What are the disadvantages of LCD monitors?
7. What is meant by resolution?
8. List the categories of a printer with example.
9. List the different types of PC.
10. What is URL?

(10 × 1 = 10)

Part B

Answer any **eight** of the following.

2 marks each.

11. What are the characteristics of a computer?
12. List the fifth generation languages.
13. How to identify the bar code?
14. How do touch screen systems work?
15. Compare RAM and ROM.
16. List the different ways to represent data.
17. What is control unit?
18. What are solid state storage devices?

Turn over

19. What is boot sector?
20. List the removable high capacity magnetic disks.
21. What are the uses of tape drives?
22. What are computer networks?

(8 × 2 = 16)

Part C

Answer any **six** of the following.

4 marks each.

23. Explain in detail with block diagram, the parts of a computer.
24. Write a note on Keyboard.
25. Explain any *two* optical input devices.
26. Explain the components of CPU.
27. Explain how data is stored on a magnetic disk.
28. Explain any *two* optical storage devices.
29. Explain in detail the different types of operating system.
30. Write a note on Multimedia.
31. Describe the categories of network.

(6 × 4 = 24)

Part D

Answer any **two** of the following.

15 marks each.

32. Explain in detail the different types of Monitors.
33. Explain the working of Impact Printers.
34. Explain Hard Disks.
35. Explain the features of Internet.

(2 × 15 = 30)

E 6068

(Pages : 2)

Reg. No.....

Name.....

B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2018

First Semester

Complementary Course—BASIC STATISTICS

(2013—2016 Admissions)

Time : Three Hours

Maximum Marks : 80

Part A (Short Answer Questions)

Answer all questions.

Each question carries 1 mark.

1. Define mean of a data set (observations).
2. Give a possible misuse of statistics.
3. What is nominal scale ?
4. Define geometric mean of a set of observations.
5. What is statistical definition of probability ?
6. Define sample space of a random experiment.
7. Define random variable.
8. Define distribution function of a random variable.
9. What is manifold classification ?
10. Define a sample.

Part B (Brief Answer Questions)

(10 × 1 = 10)

Answer any eight questions.

Each question carries 2 marks.

11. What is meant by secondary data ?
12. Explain bar diagram.
13. What are the advantages of diagrammatic representation of data ?
14. What are the merits of percentiles ?
15. Define independent events.
16. Write the sample space of throwing three coins.
17. What are the properties of distribution function.
18. Find the value of K if $f(x) = Ke^{-8x}$, $x > 0$, $k > 0$ is a p.d.f.
19. What is the use of co-efficient of variation ?

Turn over

20. What are the demerits of median ?
21. Who introduced the measure approach to probability ?
22. What is meant by "two mutually exclusive events" ?

(8 × 2 = 16)

Part C (Descriptive/Short Essay Type Questions)

*Answer any six questions.
Each question carries 4 marks.*

23. Define conditional probability. How is it useful ?
24. Two events A and B are such that $A \cap B = \phi$. Are they independent ?
25. State and prove the multiplication theorem for probability.
26. In a coin tossing experiment, write down the sample space. Define a random variable on this sample space as $X(H) = 1$ and $X(T) = 0$. Write down the p.m.f. of X and its c.d.f.
27. Describe the stem and leaf chart. Illustrate with an example.
28. Distinguish random sample with replacement and without replacement.
29. Distinguish between permutations and combinations clearly bringing out the conceptual difference.
30. Explain stratified sampling. Compare it with simple random sampling.
31. Calculate the harmonic mean of the following observations :

3, 7, 6, 2, 5, 1, 4.

(6 × 4 = 24)

Part D (Long Essay Type Questions)

*Answer any two questions.
Each question carries 15 marks.*

32. Explain the uses of diagrams and graphs in presenting statistical data.
33. Explain various methods of collecting a sample.
34. The mean and SD of 11 observations are 25 and 5 respectively. Later it was found that two observations, 26 and 35 were read as 25 and 36 of mistake. Find the correct mean and SD.
35. (a) Discuss total probability rule using diagrams of sample space and events.
(b) State and prove Baye's theorem.

(2 × 15 = 30)

IC B438

(Pages : 8)



B.Sc./B.C.A. DEGREE (CBCS) EXAMINATION, JANUARY/FEBRUARY 2018

First Semester

Course—METHODOLOGY OF PROGRAMMING AND C LANGUAGE

(Common to B.C.A., B.Sc. (CS), B.Sc. (IT), B.Sc. (Computer Application Triple Main))

(2017 Admissions)

Time : Three Hours

Maximum Marks : 80

Part A

*Answer any ten questions.
Each question carries 2 marks.*

1. What is algorithm ?
2. What is a pointer ?
3. What are key words ?
4. What is pseudo code ?
5. Define linker.
6. What is meant by testing and debugging ?
7. Briefly explain the characteristics of a good program.
8. Discuss the purpose of program planning.
9. What are enumerated datatypes ?
10. What is a variable ? What are variable naming rules ?
11. List any three unconditional branching statements.
12. What are header files ? Give examples.

(10 × 2 = 20)

Part B

*Answer any six questions.
Each question carries 5 marks.*

13. Discuss various bitwise operations in C.
14. What are strings ? Explain any 5 standard string functions.
15. What are structures in C ? How is it different from union ? Give example.
16. Discuss various arithmetic operations with pointers.

Turn over



17. Explain the difference between entry controlled and exit controlled loops. Explain with the help of suitable example.
18. What are language translators ?
19. What is meant by dynamic memory allocation ? Explain.
20. What is recursion ? Explain direct and indirect recursion.
21. With the help of flowchart, explain any two decision statements in C. Give examples.

(6 × 5 = 30)

Part C

*Answer any two questions.
Each question carries 15 marks.*

22. Write a C program to add two square matrices.
23. Write notes on various operators in C.
24. What is a function ? Discuss different types of functions. Give examples.
25. Explain in detail the various data types in C.

(2 × 15 = 30)

E 6157

(Pages : 2)

Reg. No.....

Name.....

B.Sc./B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2018

First Semester

Core Course—METHODOLOGY OF PROGRAMMING AND PROGRAMMING IN C

(Common for B.Sc. Computer Science and B.C.A.)

[2013—2016 Admissions]

Time : Three Hours

Maximum Marks : 80

Part A

*Answer all questions.
Each question carries 1 mark.*

1. What is topdown design ?
2. What is cohesion ?
3. What is a flowchart ?
4. What are constants ?
5. What is an array ?
6. What is the value of '6' ?
 $\text{float } f = 1/4.0 + 1/4 ;$
7. Define Recursion.
8. What are formal parameters ?
9. How to initialise a pointer variable ?
10. Define Union.

(10 × 1 = 10)

Part B

*Answer any eight questions.
Each question carries 2 marks.*

11. What are the characteristics of algorithm ?
12. What are the advantages of modular programming ?
13. Name the basic datatypes in C with their storage size.
14. Write the precedence and order of evaluating operators in C.
15. Write any 4 mathematical functions.
16. What is the purpose of goto in C ?

Turn over

17. What are symbolic constants ?
18. How to define a structure in C ?
19. What is meant by call by reference ?
20. Compare break and continue in C.
21. Define Pointer.
22. What is an identifier ?

(8 × 2 = 16)

Part C

*Answer any six questions.
Each question carries 4 marks.*

23. Write an algorithm to find the sum of the digits and reverse of a number.
24. Explain the qualifiers in C.
25. Explain do...while with example.
26. Write a program to count the number of vowels in a string.
27. Write a C program to sort a set of numbers.
28. Explain the flow charting symbols.
29. Explain multidimensional arrays.
30. With suitable example, explain nesting of for loops.
31. Explain how to use pointers to access array elements.

(6 × 4 = 24)

Part D

*Answer any two questions.
Each question carries 15 marks.*

32. Explain the different types of operators in C.
33. Explain different forms of if statement.
34. Describe the storage classes in C.
35. Write short notes on :
 - (a) Programming techniques.
 - (b) Debugging.
 - (c) Function declaration and definition.

(2 × 15 = 30)

E 8441

(Pages : 2)

Reg. No. 170021092616

Name. Amalraj P.R.

B.C.A./B.Sc. DEGREE (CBCS) EXAMINATION, JANUARY/FEBRUARY 2018

First Semester

Computer Applications Model III (Triple Main)

Core—CA ICR T01—COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES

(Common to B.C.A.)

[2017 Admissions]

Time : Three Hours

Maximum Marks : 80

Part A

Answer any ten questions.

Each question carries 2 marks.

1. Define a digital computer.
2. What is an internet ? Explain.
3. Differentiate between a latch and a flip flop.
4. What is an encoder ?
5. Explain any two input devices.
6. What is an operating system ? Explain.
7. Write short note on A to D converters.
8. What is a search engine ? Explain.
9. What is an error correction code ?
10. Differentiate between RAM and ROM.
11. What do you mean by the resolution of a monitor ?
12. Simply using De Morgan's theorem :
 - (a) $(AB)' + (CD)'$
 - (b) $(A(B + C))'$

(10 × 2 = 20)

Turn over

Part B

*Answer any six questions.
Each question carries 5 marks.*

13. Explain different types of networks.
14. Explain the working of a dot matrix printer.
15. Obtain the canonical form of the following functions :
 - (a) $AB + BD + ACD$.
 - (b) $(A + D + B)(A + C)$.
16. Discuss the working of RS flip flops.
17. Describe 3 to 8 line decoder.
18. With truth table, explain the basic gates.
19. Subtract 45_8 from 66_8 using 1's complement and 2's complement method.
20. Explain different types of plotters.
21. What are SOP and POS forms ? Explain.

(6 × 5 = 30)

Part C

*Answer any two questions.
Each question carries 15 marks.*

22. Explain the working of Master-Slave and JK flip flop.
23. State and prove basic rules and laws of Boolean Algebra.
24. Explain different types of computers.
25. Explain the working of Internet. What are the major features of Internet.

(2 × 15 = 30)

E 8442

(Pages : 2)

Reg. No. 2617

Name Anulakshmi

B.C.A. DEGREE (CBCS) EXAMINATION, JANUARY/FEBRUARY 2018

First Semester

Complementary Course—BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY

(Only for B.C.A.)

[2017 Admissions]

Time : Three Hours

Maximum Marks : 80

Part A

Answer any two questions.
Each question carries 2 marks.

- ✓ 1. Define average.
- ✓ 2. If mean = 25, mode = 30, what is median ?
- ✓ 3. What are quartiles ?
4. Define correlation.
5. What is curve fitting ?
- ✓ 6. What would be your interpretation of the correlation is 1 and -1 ?
- ✓ 7. Define random experiment with an example.
- ✓ 8. What is classical definition of probability ?
9. Define conditional probability.
- ✓ 10. Define random variable.
- ✓ 11. If $V(X) = 2$, find $V(2X + 5)$.
12. A random variable X has $E(X) = 2$, $E(X^2) = 8$. Find $V(X)$.

(10 × 2 = 20)

Part B

Answer any six questions.
Each question carries 5 marks.

- ✓ 13. What are the desirable properties of a good average ?
14. What is a box plot ?
- ✓ 15. Find mean deviation about mean :

11, 3, 0, 7, 2, 6, 4, 7.

Turn over

- ✓ 16. Distinguish between correlation and regression.
17. Explain the principle of least squares.
- ✓ 18. State and prove addition theorem for two events.
19. Three men working Independently attempt to decode a secret message. If their individual probabilities of success are 0.2, 0.4 and 0.5, What is the probability that the message is decoded ?
20. An unbiased die is thrown. Sketch the graph of its mass function and distribution function.
21. A random variable X has the density function :

$$f(x) = \frac{c}{(1+x^2)}; -\infty < x < \infty.$$

Find the value of the constant c.

(6 × 5 = 30)

Part C

Answer any two questions.
Each question carries 15 marks.

22. Calculate the coefficient of correlation from the following data :

Roll No.	:	1	2	3	4	5	6	7	8	9	10
Marks in Maths	:	45	56	39	54	45	40	56	60	30	35
Marks in Law	:	40	56	30	44	36	32	45	42	20	36

23. State and Prove Baye's theorem.
- ✓ 24. A random variable X has the following probability function :

$$\begin{aligned} f(x) &= k \sqrt{x} \text{ for } x = 0 \\ &= 2k \sqrt{x} \text{ for } x = 1 \\ &= 3k \sqrt{x} \text{ for } x = 2 \\ &= 0 \text{ otherwise} \end{aligned}$$

- (a) Determine the value of k. (5)
- (b) Find $P(X < 2)$, $P(X \leq 2)$. (5)
- (c) Write down the distribution function of X. (5)
25. Find the mean, variance and moment generating function of :

$$f(x) = \begin{cases} a e^{-ax}; & x > 0, a > 0 \\ 0 & ; \text{otherwise} \end{cases}$$

[2 × 15 = 30]



18103825

QP CODE: 18103825

Reg No :

Name :

BCA DEGREE(CBCS)EXAMINATION, DECEMBER 2018

First Semester

Bachelor of Computer Application

**Complementary Course - ST1CMT31 - BASIC STATISTICS AND INTRODUCTORY
PROBABILITY THEORY**

2018 Admission only

C7F554E6

Maximum Marks: 80

Time: 3 Hours

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. What are cumulative frequency curves?
2. What are partition values?
3. Find the range for the series 43, 25, 18, 29, 9, 69, 71.
4. What is curve fitting?
5. Write down the equation of a straight line by explaining the terms used.
6. Comment on the result: $b_{yx} = -0.82$ and $b_{xy} = 0.25$
7. Distinguish between sure event and impossible event.
8. What is the probability of selecting a boy from a class containing 4 Boys and 3 girls?
9. What are prior probabilities?
10. What is cumulative probability function?
11. Find the expectation of X if $f(x) = 30x^4$ $0 \leq x \leq 1$.
12. Write down the formula for mean, SD and mgf of a continuous random variable.

(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Draw a histogram and super impose on it the frequency polygon

Mid value	15	25	25	45	55	65	75
Frequency	9	25	38	35	18	12	5





14. Find mean and median for the following:

Class	0-10	10-20	20-30	30-40	40-50
f	12	17	22	18	11

15. Find coefficient of variation for the following
43,25,18,29,9,52,69,71,50,10.
16. What is a scatter diagram? From the scatter diagram how do you infer the nature of relationship between the variables?
17. How to identify the two regression lines?. Explain
18. Explain statistical regularity and frequency approach to probability
19. Define conditional probability and statistical independence.
20. From the following mass function ,obtain the value of c and distribution function

X	0	1	2	3	4	5	6	7	8
P(x)	c	3c	5c	7c	9c	11c	13c	15c	17c

21. Define the terms Expectation and Variance of discrete randomvariables.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Find SD and coefficient of variation :

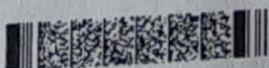
Class	10-15	15-20	20-25	25-30	30-35
frequency	5	20	47	38	10

23. Calculate the coefficient of correlation from the following data:Also obtain the equations of the regression lines.

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

24. A bag contains 8 balls, identical except for colour of which 5 are red and 3 white. A man draws two balls at random one after another with out replacement. What is the probability that (1) one of the ball drawn is white and other red (2) What would be the value of these probabilities if a ball drawn is replaced before another ball is drawn.
25. (a) State the properties of mathematical expectation (b) Find the expectation and variance of $f(x)=30x^4(1-x)$ for $0 < x < 1$

(2×15=30)



QP CODE: 19101008



Reg No :

Name :

B.Sc/B.C.A .DEGREE(CBCS)EXAMINATION, DECEMBER 2018

First Semester

CORE - CS1CRT01 - COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES

(Common to B.Sc Computer Applications Model III Triple Main, Bachelor of Computer Application)

2017 Admission Reappearance

036CBF6F

Maximum Marks: 80

Time: 3 Hours

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. Differentiate between RAM and ROM.
2. What are the disadvantages of CRT monitor?
3. What is GUI?
4. Differentiate between DOS and Windows OS
5. Why do digital computers use binary numbers for their operations?
6. What are BCD numbers?
7. Explain how NAND gate act as OR gate?
8. Convert the expression into canonical form $f = AB + B'C$
9. Explain the rules used in K-map to simplify an expression.
10. What is a flip-flop?
11. What is the need of a half adder?
12. What is the function of multiplexer?

(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Explain different parts of a computer system.
14. Compare the features of WAN with MAN.
15. Which are the features of Internet?





16. Convert $(101.00101)_2 = (\dots\dots) 8 = (\dots\dots) 10$
17. Subtract: (a) $1101 - 0101$ (b) $1001 - 0110$ (c) $1100111 - 110001$
18. Explain XOR gate and its applications.
19. Simplify the following using Boolean laws only. a. $F = AB + A(B+C) + B(B+C)$ b. $F = A'B + BC' + BC + AB'C'$ c. $F = A + AB + AB'C$
20. Discuss the truth table of decoder.
21. Difference between static and dynamic shift registers.

(6×5=30)

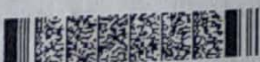
Part C

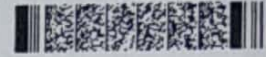
Answer any **two** questions.

Each question carries **15** marks.

22. Explain about various optical input devices.
23. What are complements in binary system? Explain with example.
24. Using Kmap simplify $f = \sum m(1,2,4,7,8,9,10,14,15) + \sum d(0,3,5,11,12)$ Realize the reduced expression using NOR gates?
25. What are the differences between J-K and Master Slave flip

(2×15=30)





QP CODE: 19101225



19101225

Reg No :

Name :

BCA DEGREE (CBCS) EXAMINATION, DECEMBER 2018

First Semester

Bachelor of Computer Application

**Complementary Course - ST1CMT31 - BASIC STATISTICS AND INTRODUCTORY
PROBABILITY THEORY**

2017 Admission (Reappearance)

8024288F

Maximum Marks: 80

Time: 3 Hours

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. What are ogives?
2. What is Box plot?
3. What is mean deviation?
4. What is a scatter diagram?
5. What is the sign of the regression coefficient if the correlation coefficient is negative?
6. When correlation coefficient is zero, what is the nature of the regression lines?
7. Explain the term sample point with example.
8. Write down the sample space for throwing an unbiased coin and a die.
9. If $P(A)=1/13, P(B)=1/4$ and $P(A \text{ and } B)=1/52$. Find $P(A/B)$
10. If $f(x) = 2x$ for 0
11. If $U=ax+b$ find the expectation of U where a and b are constants.
12. Find the mean of X with pdf of $f(x)=x/5$ for 0

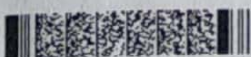
(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. What is a Histogram? How will you construct it.
14. Find median, quartiles and 8th decile of the following:
120, 130, 140, 110, 160, 150, 190, 180, 170, 200





15. Compute Sd for the following data:

Marks	10	20	30	40	50	60
No. of students	4	7	15	8	7	2

16. Explain how will you fit an exponential curve?
 17. Find the correlation coefficient between X and Y from the following:

X	3	1	4	7	8	9	2	6	5
Y	4	2	3	6	5	8	1	7	9

18. State modern definition of probability. What are the properties of probability?
 19. State addition theorem for two events and deduce the result for three events
 20. An unbiased die is thrown. Obtain the probability distribution for it.
 21. A random variable X has the pdf $f(x) = c/(1+x^2)$. Find the value of c

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Find mean, median for the following data and obtain mode graphically:

Marks	10-19	20-29	30-39	40-49	50-59	60-69
f	20	45	26	13	11	15

23. Fit a straight line using the method of least squares to the following data:

X	1	2	3	4	5	6	7	8	9	10
Y	52.5	58.7	65.0	70.2	75.4	81.1	87.2	95.5	102.2	108.4

24. Given A, B, C are independent events. $P(A)=0.3, P(B)=0.2$ and $P(C)=0.4$. Find the probability for (a) all occurring (b) none occurring (c) At least one occurring (d) Exactly one occurring
 25. Briefly explain mean, variance and mgf of a random variable. Also state their properties.

(2×15=30)

