(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

THIRD SEMESTER [BCA] DECEMBER-2019

Paper Code: BCA201 ***Subject: Mathematics-III***

Time: 3 Hours ***Maximum Marks: 75***

Note: Attempt five questions in all including Q. No. 1 which is compulsory. Select one question from each unit.

Q1 Attempt **any three** following questions in brief:- **(3x5=15)**

a) How would you account for the predominant choice of A.M. as a measure of central tendency? Under what circumstances would it be appropriate to use mode or median?

b) Define (i) ogives, (ii) histogram (iii) Lorenz curve.

c) When is mode preferred over other form of average?

d) The marks obtained by 9 students in a test are 25,20,15,45,18,7,10,38 and 12. Find the value of Q_1, Q_3, I.R and Q.D.

e) Define (i) Transportation problem (ii) LPP (iii) Stepping-Stone method

UNIT I

Q2. (a) Determine the median wage graphically from the following data: **(5)**

Wages	No. of workers	Wages	No. of workers
700-800	4	1100-1200	12
800-900	6	1200-1300	7
900-1000	10	1300-1400	3
1000-1100	16		

(b) Coefficient of variation of two series is 60% and 80%. Their standard deviations are 24 and 20. What are their arithmetic means? **(5)**

(c) In a group of 1000 wage earners the monthly wages of 4% are below Rs.60 and those of 15% are under Rs.62.50, 15% earned Rs.95 and over, and 5% get Rs.100 and over. Find the median wage. **(5)**

Q3. (a) For the following data of the frequency of visit of customers in a shop in the month of April, year 2017, starting from 1st to 30th (Row wise), **(5)**

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

(i) Draw a frequency table and find the dates on which customer are more frequent.

(ii) Find the average number of visit in this month.

(iii) Which of the week showing more favorable visit for the customers?

(b) Prove that the Standard deviation is independent of any change of origin but is dependent on the change of scale. **(5)**

[P.T.O.]

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c) Find the standard deviation and coefficient of variation from the following data: **(5)**

Wages	No. of workers	Wages	No. of workers
Upto Rs.110	12	Upto Rs.150	157
Upto Rs.120	30	Upto Rs.160	202
Upto Rs.130	65	Upto Rs.170	222
Upto Rs.140	107	Upto Rs.180	230

UNIT II

Q4.a) Given standard deviation with respect to data X is 3 and regression equation are

$4X-5Y+33=0$,
$20X-9Y-107=0$,

Find (a) A.M. of data X
(b) A.M. of data Y
(c) Standard deviation of data Y
(d) Correlation coefficient. **(7)**

b) From the following table, find correlation coefficient between age and playing habit of students: **(8)**

Age (years):	15	16	17	18	19	20
No. of students:	250	200	150	120	100	80
Regular players:	200	150	90	48	30	12

Q5.a) Define Regression. Why are there two regression lines? Under what conditions can there be only one regression line? **(5)**

b) A consulting firm is preparing a study on consumer behavior. The company the following data in thousand rupees to determine whether there is a relationship between consumer income and consumption levels: **(10)**

Consumer No.	1	2	3	4	5	6
Income (Rs.)	300	350	320	400	295	315
Consumption (Rs.)	250	275	270	300	269	290

Calculate correlation coefficient for the above data. Write your comments about the correlation coefficient' value

UNIT III

Q6. (a) The manager of an oil refinery must decide on the optimal mix of two possible blending processes of which the inputs and outputs per production run are as follows: **(7)**

Process	Input(units)		Output (units)	
	Crude A	Crude B	Gasoline X	Gasoline Y
1	5	3	5	8
2	4	5	4	4

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The maximum amounts available of crude A and B are 200 units and 150 units, respectively. Market requirement show that at least 100 units of gasoline X and 80 units of gasoline Y must be produced. The product per production run from process 1 and 2 is Rs.300 and Rs.400 respectively. Solve the above Linear Programming Problem by **GRAPHICAL** method.

(b) Minimize $z=2x_1+3x_2$
Subject to: $x_1-2x_2 \leq 0$
$-2x_1+3x_2 \geq -6$
x_1, x_2 unrestricted. **(8)**

Q7. Maximize $Z = 4x_1 + x_2 + 3x_3 + 5x_4$
Subject to constraints: $4x_1 - 6x_2 - 5x_3 - 4x_4 \geq -20$
$-3x_1 - 2x_2 + 4x_3 + x_4 \leq 10$
$-8x_1 - 3x_2 + 3x_3 + 2x_4 \leq 20$
$x_1, x_2, x_3, x_4 \geq 0$ **(15)**

UNIT IV

Q8. Given below is a transportation table taken from the solution process for a transportation problem:

		Distribution Centres			
		1	**2**	**3**	**4**
Factories	**A**	10	5000 8	7	12
	B	12	13	4500 6	1500 10
	C	7000 8	500 10	12	1500 14

Answer the following questions, giving brief answers:
(i) Is this solution feasible?
(ii) Is this solution degenerate?
(iii) Is this solution optimal? If not, find the optimal solution.
(iv) Does the problem have alternative optimal solution? If yes, give another optimal solution. **(15)**

Q9. A company has 4 machines to be assigned to 4 of the 5 workers available for the purpose. The expected production from each machine operated by each worker is given below:

Expected Daily Production (in units) Workers

Machine	A	B	C	D	E
I	40	46	48	36	48
II	48	32	36	29	44
III	49	36	41	38	45
IV	30	46	49	44	47

Suggest optimum assignment of workers to machines. **(15)**

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P3/P3

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END TERM EXAMINATION

THIRD SEMESTER [BCA] DEC. - 2019

Paper Code: BCA203 ***Subject: Computer Architecture***

Time: 3 Hours ***Maximum Marks: 75***

Note: Q. No. 1 is compulsory. Attempt one question from each unit.

Q1 Attempt ***any five*** of the following:- **(5x5=25)**

a) Differentiate between strobe and handshaking method in context of asynchronous data transfer.
b) What is the need of input output interface.
c) What is memory interleaving?
d) Explain with diagram Control Unit of Basic Computer.
e) Explain Register Transfer language.
f) Give difference between RISC and CISC.
g) Give symbolic description for the following memory reference instruction: AND, STA, BSA.

UNIT I

Q2. a) Explain construction of Bus having 4 register of 8 bit each by using three state bus buffer and a decoder. **(6)**

b) Explain and Design a 4-bit arithmetic circuit which perform all arithmetic operations. **(6.5)**

Q3. a) Explain the Instruction Cycle with the help of flowchart. **(6)**

b) Starting from an initial value of R = 11110110, determine the sequence of binary values of R after a logical shift left, followed by a circular shift right, followed by a logical shift right and a circular shift left. **(6.5)**

UNIT II

Q4. What is pipeline? Explain the instruction pipeline and the three major difficulties that cause instruction pipeline to deviate from its normal operation and there any two solutions problems. **(12.5)**

Q5. a) Explain all the addressing modes with example for each. **(6)**

b) Evaluate the given arithmetic statement using zero, one or two Address Instruction. **(6.5)**

$$X = \frac{A - B + C}{(G + H) * K}$$

UNIT III

Q6. a) Multiply using Booth algorithm (+19) x (-11). **(6)**

b) Discuss DMA. Discuss DMA Controller and DMA Transfer with block diagram? **(6.5)**

Q7. a) Explain Input/ Output Interface with help of diagram? **(6)**

b) Define the following: **(6.5)**

(a) Priority Interrupt (b) Daisy-chaining priority

[P.T.O.]

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P1/P2

UNIT IV

Q8. a) What is Mapping? Explain all Mapping Methods (associative mapping, direct mapping and set-associative mapping) **(12.5)**

Q9. a) What is Associative Memory? Explain with suitable block diagram and explain its logic. **(6)**

b) What is the need of memory hierarchy in a computer system? Explain the block diagrams of RAM and ROM chips. **(6.5)**

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END TERM EXAMINATION

THIRD SEMESTER [BCA] NOV.-DEC. - 2019

Paper Code: BCA205 **Subject: Front end Design Tools VB.NET**

Time: 3 Hours **Maximum Marks: 75**

Note: Q. No. 1 is compulsory. Attempt one question from each unit.

Q1 Answer of the following (**Any Ten**):- **(2.5x10=25)**

1. Assemblies in .net
2. Code access security
3. Memory management
4. Namespaces
5. Exception handling
6. Constructor ad destructors
7. Message box
8. Manifest
9. Scrollbars
10. CLR and CTS
11. Different data types of vb.net
12. Features of vb.net

UNIT I

Q2. a) Explain the various components of .net architecture. **(6)**

b) What is Garbage collection with reference to vb.net? **(6.5)**

Q3.a) What is a client server model? What are two tier and three tier models? **(6)**

b) Write a program to check weather a number is odd or even using console application. **(6.5)**

UNIT II

Q4.a) What is an array list? Explain with the help of an example. **(6)**

b) Differentiate between vb and vb.net. **(6.5)**

Q5. a) What are dynamic arrays? Explain with examples. **(6)**

b) What are enumerations? Explain with help of an example. **(6.5)**

UNIT III

Q6.a) Create a base class employee. Create two functions input and display. Make two inherited classes waged and salaried employee. Again create two functions input and display to the waged and salaried employee classes. Use the concept of function overriding and also make on object of classes waged and salaried employee. Apply the concept of inheritance and function overriding. **(6)**

b) Write a program to print the Fibonacci series as windows console application. **(6.5)**

Q7.Explain various controls

a) Radio button b) Timer c) tree view d) combo box **(6)**

b) Explain the working of open dialog, save dialog, color dialog with the help of an example. **(6.5)**

[P.T.O.]

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UNIT IV

Q8. a) Explain ADO.net architecture and their components in detail. **(6)**

b) Write short notes on data sets, connection, Adapter and command objects of ADO.net **(6.5)**

Q9. a) What is a crystal report. Write down the steps of creating a crystal Report. **(6)**

b) Write a program in ADO.net code to show the records of employee table containing empno and empname and their salaries. Write the entire connectivity code. **(6.5)**

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(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

THIRD SEMESTER [BCA] NOV.-DEC. - 2019

Paper Code: BCA207 ***Subject: Principles of Accounting***

Time: 3 Hours ***Maximum Marks: 75***

Note: Attempt any 5 Questions including Q. No. 1 is compulsory. Attempt one question from each unit.

Q1. Attempt **any three** parts:- **(3x5=15)**

a) State the persons who should be interested in accounting information.
b) What is an opening entry?
c) Explain the need and significance of charging Depreciation.
d) Explain the Imprest System of preparing Petty cash book.
e) Compare the LIFO and FIFO methods of inventory valuation.

UNIT I

Q2. Explain the following **(3x5=15)**

a) Convention of conservatism
b) Matching concept
c) Need for Accounting standards
d) Branches of Accounting
e) Inter-relationship between Accounting and Management

OR

Q3. What are the fundamental accounting assumptions? Explain their implications. **(15)**

UNIT II

Q4. On 1st January 2019, the following were the balance of Rajan & Co.: Cash in hand Rs.900; Cash at bank Rs.21,000, Soni (Cr.) Rs.3,000; Zahir (Dr.) Rs.2,400; Stock Rs.12,000; Prasad (Cr.) Rs.6,000; Sharma (Dr.) Rs.4,500; Lall (Cr.) Rs.2,700. **(15)**

Transactions during the month were:-

		(Rs.)
Jan 2, 2019	Bought Goods from Prasad	2,700
Jan 3	Sold to Sharma	3,000
Jan 5	Sold to Lall Goods for cash	3,600
Jan 7	Took goods for personal use	200
Jan 13	Received from Zahir in full settlement	2,350
Jan 17	Paid to Soni in full settlement	2,920
Jan 22	Paid cash for stationery	50
Jan 29	Paid to Prasad by cheque	2,650
	Discount allowed	50
Jan 30	Provide interest on capital	100
	Rent due to landlord	200

Journalise the above transactions.

[P.T.O.]

OR

Q5. Enter the following transactions of M. Rauf in a Double Column Cash Book and post them to concerned accounts in ledger: **(15)**

2019		Rs.
Jan. 1	Cash in hand	100,000
Jan. 1	Cash at Bank	60,000
Jan. 3	Cash Sales	40,000
Jan. 4	Paid Arshad by a cheque	14,000
Jan. 6	Received a cheque from Babar	8,000
Jan. 8	Cash deposited into bank	19,000
Jan. 8	Babar's cheque deposited into bank	--
Jan. 10	Drew from bank for office use	15,000
Jan. 11	Drew from bank for personal use of owner	24,000
Jan. 12	Cash purchases	57,000
Jan. 15	Received a cheque from S. Rashid	10,000
Jan. 16	Rashid's cheque endorsed to Shakeel	--
Jan. 17	Paid Arshad by a cheque	36,000
Jan. 18	Rashid's cheque returned dishonored	--
Jan. 19	Our cheque to Arshad was dishonored	--
Jan. 21	Received interest from bank	1,400
Jan. 24	Cash sales	3,300
Jan. 27	Incidental charges debited by bank	700
Jan. 31	Salary paid by cheque	14,000

UNIT III

Q6. From the following information prepare trading and profit and loss A/c and Balance sheet as on 31st March, 2019. **(15)**

Particulars	Amount	Particulars	Amount
Bad debt	800	Purchases	1,10,000
Provision for doubtful debts	500	Rent received	1,000
Carriage inward	1,800	Debtors	18,000
Commission paid	2,200	Opening stock	22,000
Salaries	9,000	Premises	20,000
General expenses	4,000	Creditors	13,300
Taxes & insurance	2,000	Bank overdraft	4,200
Discount allowed	1,600	Furniture	2,600
Discount received	2,000	Capital	30,000
Sales	1,48,000	Drawings	5,000

Adjustments:-

1. Stock on 31st March, 2019 was value at Rs.20,000
2. Depreciation on premises Rs.300 and furniture Rs.260
3. Create provision on doubtful debtors @5%
4. Interest on capital @5%
5. Unexpired insurance Rs.700

OR

Q7. Why adjustment entries are required to be made at the time of preparing Final Accounts. Give illustrative examples of any five such adjustment entries. **(15)**

[P.T.O.]

UNIT IV

Q8. A limited company purchased on 1st January 1998 a second hand plant for Rs.12,000 and immediately spent Rs.8000 on its overhauling. On 1st July in the same year additional plant costing Rs.10,000 is purchased. On 1st July 2000 the plant purchased on 1st Jan. 1998 having become obsolete is sold for Rs.4000 and on the same date fresh plant is purchased at the cost of Rs.24,000.

Depreciation is provided @ 10% per annum on original cost on 31st Dec every year. In 2001 the company changes the method of depreciation and adopts the diminishing balance method @15% from retrospective affect.

Prepare machinery Account and depreciation account. **(15)**

OR

Q9. During the month of January following receipts and issue of material were made. Record these transaction in store ledger on FIFO and weighted average method. **(15)**

Receipts

Jan 1 Balance 50 units @ Rs.4 per unit
Jan 5 Purchase Order No. 10, 40 units @ Rs.3 per unit
Jan 8 Purchase Order No. 12, 30 units @ Rs.4 per unit
Jan 15 Purchase Order No. 11, 20 units @ Rs.5 per unit
Jan 26 Purchase Order No. 13, 40 units @ Rs.3 per unit

Issues

Jan 10 Material requisition no.4, 70 units
Jan 12 Material requisition no.5, 10 units
Jan 20 Material requisition no.6, 20 units
Jan 24 Material requisition no.7, 10 units
Jan 27 Material requisition no.8, 5 units

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(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

THIRD SEMESTER [BCA] NOV.-DEC. - 2019

Paper Code: BCA209 ***Subject: Object oriented programming Using C++***

Time: 3 Hours ***Maximum Marks: 75***

Note: Attempt any five questions including Q.no.1 which is compulsory. Select one question from each unit.

Q1 Answer **any five** the following:- **(5x5=25)**

a) Explain the use of new and delete operator using example.
b) Explain namespace with example.
c) What is this pointer? Explain with example.
d) Explain Stream classes for file operations.
e) Explain aggregation in OOP with example.
f) Differentiate between compile time and runtime polymorphism.

UNIT I

Q2. a) What are features of Object Oriented Programming? **(5)**
b) Explain difference between Procedural Programming and Object Oriented Programming. **(4)**
c) Explain different C++ compilers. **(3.5)**

OR

Q3. a) What is difference between C and C++? **(5)**
b) Explain C++ standard Libraries. **(4)**
c) What are different applications of OOP? **(3.5)**

UNIT II

Q4. a) What are C++ abstract classes? Explain with example. **(5)**
b) Write C++ program to illustrate constructor overloading. **(4)**
c) What is difference between constructor and destructor? **(3.5)**

OR

Q5. a) What are friend functions? Illustrate with code. Why they are not preferred? **(5)**
b) What is copy constructor? Explain with example. **(4)**
c) Explain data hiding and encapsulation with example. **(3.5)**

UNIT III

Q6. a) Explain difference between Private, Public and Protected Access Mechanism with respect to Inheritance. **(5)**
b) What are different types of Inheritence? **(4)**
c) Write a code to overload Unary operator. **(3.5)**

OR

Q7. a) What is difference between early an late binding? **(5)**
b) Explain Virtual base class with suitable example? **(4)**
c) Write a code to overload binary '+' operator? **(3.5)**

UNIT IV

Q8. a) How is an exception handled in C++? **(5)**
b) What is generic programming? How it is implemented in C++? **(4)**
c) Explain and write syntax of put() and get () functions. **(3.5)**

OR

Q9. a) What are steps involved in using a file in a C++ program? **(5)**
b) Write a C++ code to implement Command Line Argument? **(4)**
c) What are different types of exceptions? **(3.5)**

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