This question paper contains 8 printed pages]   Roll No. ....2.7.7.0.5.8....

Sl.No.   0195   **231**

B.C.A. (Part. II)

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three-Year Scheme of 10 + 2+ 3 Pattern)
Paper - 231
BUSINESS ACCOUNTING

Time : Three Hours]   *[Maximum Marks : 100*

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

Question paper consists of three Parts.
All THREE Parts are compulsory.

PART I: *(Very Short Answer) consists of 10 questions of two marks each. Maximum limit for each question is up to 40 words.*

PART II: *(Short answer) consists of 5 questions of four marks each . Maximum limit for each question is up to 80 words.*

PART III: *(Long answer) consists of 5 questions of twelve marks each with internal choice.*

PART - I

1. a)   What is trade discount?

    b)   What do you mean by convention of disclosure?

    c)   Write any two advantages of double entry system.

    d)   Write any two examples of real accounts.

    e)   What is ledger?

    f)   What are the causes of charging depreciation?

g) What do you mean by Balance Sheet?

h) What are fictions assets?

i) What is accrued income?

j) What are outstanding expenses?

[10×2=2

PART - II

2. a) Differentiate between Book-keeping and Accounting.

b) Explain various types of cash books.

c) What are the objectives of preparing a trial balance?

d) Differentiate between trading and profit & loss account.

e) Explain the methods of valuation of closing stock.

[5×4=2

PART - III

3. Define accounting and explain various accounting concepts.   [4+

OR

Explain following accounting terminology:

a) Balance Sheet

b) Current Assets

c) Drawings

d) Journal Entry

[3+3+3+

4. Journalise the following transactions in the books of Ram:

2016		Rs.
Oct. 1	Commenced business with cash	20,000
Oct. 2	Paid into Bank	16,000
Oct.3	Bought goods for cash	1,000
Oct.4	Bought furniture for office use by cheque	6,000
Oct.10	Withdrawn from Bank for office use	1,800
Oct.13	Goods sold to Gopal	1,000
Oct.15	Bought goods from Ramshankar	1,020
Oct.18	Paid trade expenses	400
Oct.19	Received cash from Gopal & allowed discount Rs.20	980
Oct.25	Paid wages	140
Oct.28	Paid to Ramshankar in full settlement	1,000
Oct.30	Interest on capital charged	1,000
Oct.30	Paid Rent	300

[12]

OR

a) What is petty cash book? What are its advantages?

b) Explain various types of subsidiary goods.

[6+6]

5. From the following balances taken from the books of M/S Mehta & Sons on 31st March, 2016, prepare a Trial Balance:

Name of Account	Rs.
Cash Balance	28,800
Opening stock	1,28,000
Purchases	5,12,000
Purchase Return	12,800
Sales	8,83,200
Sales Return	32,000
Machinery	1,53,6
Land & Buildings	3,20,000
Discount allowed	15,360
Discount Received	9,600
Debtors	1,17,760
Creditors	54,400
Bills Receivables	18,240
Bills Payables	10,560
Capital	3,84,000
Drawings	38,400
Rent	23,680
Salaries	23,040
Loan	64,000
Interest Payable on Loan	7,680

[1

OR

On 1st April, 2006 Amar Chand purchased five machines for Rs.60,000 each. Depreciation at the rate of 10% p.a. on initial cost has been charged from P&L account and credited to provision for Depreciation Account.

On 1st April, 2007 one machine was sold for Rs.50,000 and on 1st April, 2008 a second machine was sold for Rs.50,000. An improved which costs Rs.1,00,000 was purchased on 1st October, 2007. Amar Chand closes his books on 31st March each year. You are required to show

a) Machinery Account
b) Machinery Disposal Account, and
c) Provision for Depreciation Account.

[12]

6. From the following Trial Balance of Anil Kumar, prepare Trading and Profit & loss account for the year ending 31st March, 2016 and Balance Sheet as on that date.

Debit Balance	Rs.	Credit Balance	Rs.
Opening stock	31,350	Sales	4,02,160
Purchases	2,80,000	Purchase Return	1,150
Sales Returns	2,000	Creditors	62,000
Carriage inward	8,710	Discount	90
Wages	58,840	Capital	50,000
Coal, Gas & water	42,860		
Manufacturing expenses	4,840		
Debtors	67,900		
General Expenses	4,890		
Salaries	4,300		
Rent, Rates & Taxes	1,910		
Cash in Hand	70		
Cash at Bank	4,730		
Drawings	3,000		
	5,15,400		5,15,400

Closing stock as on 31st March, 2016 Rs. 53,800.

[12]

OR

What is profit & Loss account? Explain various items which are shown in P&L account by using a suitable format.   [4+8]

R-691   -5-

7. From the following Trial Balance of a trader, prepare Trading and profit & Loss account for the year ending 31ˢᵗ March, 2016 and a balance sheet as on that date.

	Dr.(Rs.)	Cr(Rs.)
Capital	-	1,20,000
Loan - 15% p.a. (1st January, 2016)	-	10,000
Commission	-	600
Provision for Bad debts	-	1,000
Purchases and sales	80,000	90,000
Returns	10,000	2,000
Debtors & Creditors	50,500	30,000
Drawings	5,000	-
Furniture	5,000	-
Machinery	30,000	-
Opening stock	20,000	-
Octroi	5,000	-
Import Duty	2,000	-
Salaries & Wages	20,000	-
Bad debts	500	-
Rent, Rates & Taxes	4,000	-
Life Insurance premium	2,000	-
Insurance on Loan	200	-
Cash	19,400	-
	2,53,600	2,53,600

Adjustments:

a) Stock on 31ˢᵗ March, 2016 was Rs.20,000.

b) Write off further bad debts Rs.500 and make provision for bad debts a ⬤% and provision for discount at 2% on debtors.

c) The proprietor withdraw goods costing Rs.600 for personal use and gave goods costing Rs.400 in charity.

d) Create reserve for discount on creditors at 3%.

e) 60% of the work relating to commission received has been completed in this year.

f) Rs.4,000 of salaries and wages is outstanding.

[12

OR

From the following Trial Balance, prepared from the books of A on 31st December, 2016 prepare an adjusted Trial Balance for the year ending 31st December, 2016.

	Rs.		Rs.
A's Drawings	1,055	A's capital	11,940
Bills Receivable	950	Loan at 6% (1.1.16)	2,000
Plant & Machinery	2,880	Sales	35,643
Sundry Debtors	6,200	Commission received	564
(including Madan for			
dishonoured cheque Rs.100)		Sundry creditors	5,963
Wages (manufacturing)	4,097		
Returns inward	278		
Purchases	25,659		
Rent & Taxes	562		
Stock on 1.1.16	8,968		
Salaries	1,100		
Travelling expenses:	188		
Insurance	40		
Cash	53		
Bank	1,897		
Repairs & Renewals	337		
Interest on loan	100		
Interest & Discount	487		
Bad Debts	362		
Fixures & Fittings	897		
	56,110		56,110

The Following adjustments are to be made:

a) Stock in hand on 31.12.16 Rs. 12,896.

b) Write off half of Madan's cheque.

c) Create a provision of 5% on Sundry debtors.

d) Manufacturing wages included Rs. 120 for installation of new machinery purchased.

e) Depreciate plant & Machinery by 5% and fixures and fittings by 10% per annum.

f) Commission not earned but received amounts to Rs.60.

[12]

EEE

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three - Year Scheme of 10+2+3 Pattern)
Paper-232
DISCRETE MATHEMATICS

Time : Three Hours] [*Maximum Marks : 100*]

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

Part I: (Very short answer)consists of 10 questions of 2 marks each. Maximum limit for each question is up to 40 words.

Part II: (Short answer) consists of 5 questions of 4 marks each. Maximum limit for each question is up to 80 words.

Part III: (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART-I

1. a) Convert following into decimal form

    i) $(110011)_2$

    ii) $(1101)_2$

    b) Convert the octal number 12.36 into binary form.

    c) Define complement of a set.

    d) Define partial order Relation.

    e) Make a truth table for the statement

    $(p \wedge q) \Rightarrow (p \vee q)$

    f) Define Regular graph and Bipartite graph.

g) Expand $\left(x+\dfrac{1}{x}\right)^6$ by binomial theorem.

h) If 'a' and 'b' are two element of Boolean Algebra then $(a.b)^1=a^1+b^1$.

i) Draw a graph having Hamiltonian circuit.

j) What is sub-tree.

PART-II

2. Convert following decimal into Binary.

a) $(1024)_{10}$

b) $(36.125)_{10}$

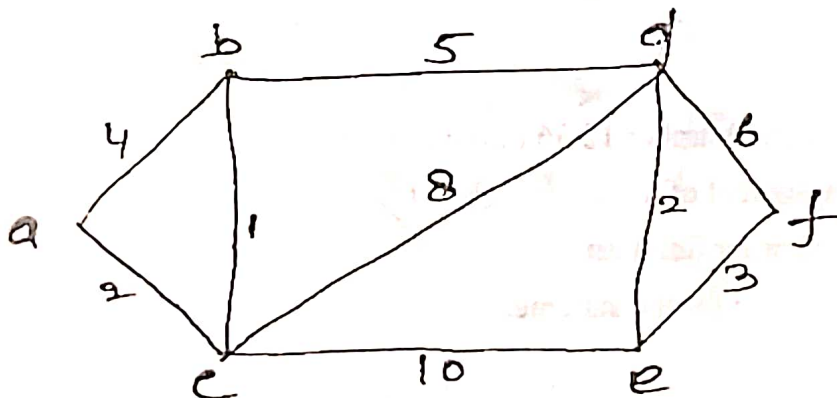3. Find the terms independent of x in the expansions of $\left(3x^2+\dfrac{1}{3x}\right)^9$.

4. Prove that.

$5+5^2+5^3+\ldots\ldots\ldots+5^n=\dfrac{5}{4}(5^n-1)$

5. Find the following recurrence relation.

$C_n=2C_{n-1}+1$, $n<1$ and $C_1=1$

6. Find the shortest path between the vertices 'a' and 'f' in the following weighted graph.

PART-III

7. a) Compute the sum of-
    i) $(101101)_2 + (110011)_2$
    ii) $(11001)_2 + (11011)_2 + (11111)_2$
    b) Compute $(436)_{10} + (51)_{10} = (\quad)_2$
    c) Subtract the binary number 1010101 from 11100101.

<div align="center">OR</div>

    a) Convert the number $(5AC)_{16}$ into binary form.
    b) Multiply $(11011)_2$ by $(111)_2$

    c) Find the middle term in the expansion of $\left(\dfrac{x}{2} - \dfrac{y}{3}\right)^8$

8. Prove that-

    a) $\dfrac{1}{1.2} + \dfrac{1}{2.3} + \dfrac{1}{3.4} + \ldots\ldots + \dfrac{1}{n(n+1)} = \dfrac{n}{n+1}$

    b) $5^{2n+2} - 24n - 25$, is divisible by 576 $\forall n \in N$.

<div align="center">OR</div>

    a) Find the coefficient of x^3 in the expansion of the product $(1+2x)^6 (1-x)^7$.
    b) $(11)^{n+2} + (12)^{2n+1}$ is divisible by 133 $\forall n \in I$.
    c) By the principle of mathematical induction prove that

    $$7+77+777+\ldots\ldots\ldots 777\ldots..7(n \text{ digit}) = \frac{7}{81} (10^{n+1} - 9n - 10),\ n \in N.$$

9. a) Using property of set, Prove that-
    i) $A \cup (A \cap B) = A$
    ii) $A \cap (A \cup B) = A$
    b) Define
    i)   one-one function
    ii) onto function
    c) If $f:R \to R$ is defined by $f(x)=2x+7$, find the inverse of f.

<div align="center">OR</div>

    a) Prove that function $f:Q \to Q$ given by $f(x)=2x-3$ for all $x \in Q$ is a bijection.

b) On the set Q^t of positive rational, binary operation are defined as following

$$a*b = \frac{ab}{3} \quad \forall \quad a,b \in Q^t$$

Prove that the operation are commutative and Associative.

10. a) Show that the compound statement $(p \vee q) \wedge (\sim p \wedge \sim q)$ is a contraduction.

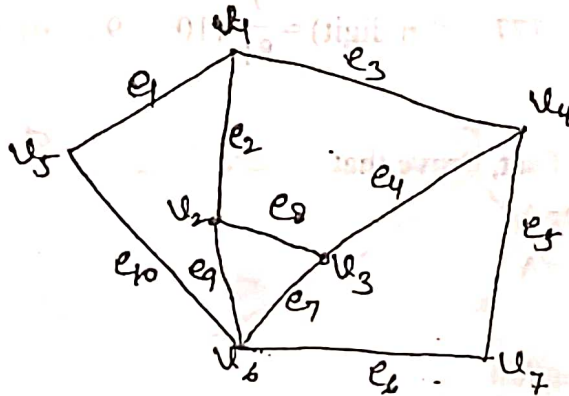b) Construct a truth table for compound proposition $\sim p \rightarrow (q \rightarrow r)$.

OR

a) If p,q,r are any three statement, then show that
$((p \vee q) \wedge (p \rightarrow r) \wedge (q \rightarrow r)) \rightarrow r$ is a tautology.

b) If B be Boolean Algebra and $a,b, \in B$ then

i) $a + a.b = a$

ii) $a.(a+b) = a$

11. Define any three with example

a) Isomorphic Graph

b) Walk

c) Hamiltonian Graph

d) Complete Binary tree

e) Complete Graph

OR

Incident Matrix and Adjacency Matrix of following Graph

✈ ✈ ✈

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three-Year Scheme of 10+2+3 Pattern)
Paper-233
OPERATING SYSTEMS

Time : Three Hours]   *[Maximum Marks : 100*

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

PART-I
Each question is of 2 marks.
Words limit for the answers is 40 words.

PART - II
Each question is of 4 marks.
Words limit for the answers is 80 words.

PART - III
Each question is of 12 marks.

PART-I

1. Give short answers to the following-   [10×2=20]

   a) What do you mean by Operating System?

   b) Discuss the goal of 'Authentication'.

   c) What is 'Multiprogramming System'?

   d) Enlist the various services provided by the Operating System?

   e) What is System Call?

f)   Write the definition of Process?

g)   Enlist the various states of process.

h)   What is 'Thread'?

i)   What do you mean by 'Logical Address'?

j)   Differentiate between 'File' and 'Directory'.

PART-II

Each Question is of 4 marks. Limit for the answer is 80 words.

2. Discuss various criteria for measuring the performance of scheduling mechanism?   [4]

3. Write the method of recovery from deadlock.   [4]

4. Explain 'Demand paging' in brief?   [4]

5. Discuss the file system in brief.   [4]

6. What do you mean by Encryption? Discuss.   [4]

PART-III

Each Question is of 12 marks.

7. Discuss 'Process Control Block (PCB)' with the help of proper illustration. Also, explain various types of schedulers.   [12]

OR

Explain various preemptive scheduling mechanisms in detail.

8. How can a deadlock situation be avoided? Discuss.   [12]

OR

How to detect a 'Deadlock'? Explain.

9. Discuss 'Single Program Partition', 'Fixed-Sized Partitioning' and 'Variable Sized Partition' memory allocation techniques in brief. [12]

OR

Explain various 'Page Replacement Algorithms' in brief with the help of suitable example of each?

10. Discuss strategies of contiguous, linked and indexed allocation in file system.[12]

OR

Explain the various types of directory systems with the help of suitable example of each.

11. How a file can be protected? Discuss various protection mechanisms used for protecting files. [12]

OR

In today's scenario, what kind of security is need in context of Computer System? Discuss various security threats in brief.

✈ ✈ ✈

R-693

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three-Year Scheme of 10 + 2+ 3 Pattern)
Paper - 234
DATABASE MANAGEMENT SYSTEM

Time : Three Hours]   *[Maximum Marks : 100*

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

Part I: (Very short Answer) consists of 10 questions of two marks each. Maximum limit for each question is up to 40 words.

Part II: (Short answer) consists of 5 questions of four marks each. Maximum limit for each question is up to 80 words.

Part III: (Long answer) consists of 5 questions of twelve marks each with internal choice.

PART - I

Q1) a)   List any four advantages of using a DBMS.

b)   What is a schema?

c)   What is an E-R Diagram?

d)   Differentiate between super key and candidate key.

e)   What is a transaction?

f)   What is Join statement?

g) What is sub query?

h) Why normalization is required?

i) How transaction is committed in a distributed system?

j) What is ODL?

PART - II

Q2) a) Differentiate between Logical and Physical data independence. [4]

b) What is aggregation? Give example. [4]

c) Explain the structure of SQL SELECT statement. [4]

d) What is access control? [4]

e) What do you mean by concurrency control? [4]

PART - III

Q3) Define DBMS. What are the advantages of DBMS over conventional file processing system? What are the functions of a database administrator?[2+6+4]

OR

Explain the rules defined by Codd that are necessary for any DBMS to be considered as a RDBMS. [12]

Q4) Differentiate between following: [3×4=12]

a) Strong and Weak entity

b) Referential and Domain integrity

c) Single valued and multi valued attributes

OR

What is relational algebra? Explain different types of join and aggregate operations of relational algebra. Give appropriate examples.

[2+10]

Q5) Explain normalization & its different forms. Give appropriate examples. **[12]**

OR

Describe backup and recovery mechanisms available in DBMS.

Q6) Write SQL queries for the following: **[12]**

Consider the table SPORTS having fields: (RollNo, Class, Name, Game, Grade)

a) Display the names of the students who have grade 'C' or grade 'D'.

b) Display the grade of the students whose name starts with 'D'

c) Display the different games offered.

d) Display the Roll number and name of the student who belong to class '7' and plays hockey.

e) Delete the student record whose roll no. is 101.

OR

Explain the data types availabale in SQL. Also explain various aggregate functions in SQL with suitable examples.

Q7) Explain the following: **[12]**

a) Distributed Transactions

b) Object-relational Databases

OR

Define object databases. Describe persistent programming languages. What are the several approaches proposed to make the objects persistent?

ଔଃୠଔଃୠ

This question paper contains 3 printed pages]   Roll No. ....2.770.58.......

Sl.No. 0249   235

B.C.A. (Part - II)

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three-Year Scheme of 10 + 2+ 3 Pattern)
Paper - 235
WEB DESIGNING AND MULTIMEDIA

Time : Three Hours]   [Maximum Marks : 100

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

Question paper consists of three Parts
All THREE Parts are compulsory

Part I: (Very short Answer) consists of 10 questions of two marks Maximum limit for each question is up to 40 words.

Part II: (Short answer) consists of 5 questions of four marks Maximum limit for each question is up to 80 words.

Part III: (Long answer) consists of 5 questions of twelve marks each with one question from each unit with internal choice.

PART - I

1. a)   What is Web Page?   [10×2=20]

    b)   What is a Web Browser?

    c)   What is the difference between HTML elements and tags?

    d)   What are three ways to reduce page load time?

    e)   How can you refer to CSS file in the web page?

f)   What hierarchy is being followed when uses style sheets?

g)   What is a named function in JavaScript? How to define a named function?

h)   What are all the looping structures in JavaScript?

i)   What are Lasso tools and name them?

j)   What is Pen Tool in coral draw?

PART - II

2.   a)   What do you mean by web portal?   [5×4=20]

     b)   What are the ways to link an image, a website, and an email address?

     c)   What are the components of a CSS Style?

     d)   What are the valid scopes of a variable in JavaScript?

     e)   List the features of Photoshop?

PART - III
UNIT - I

3.   What are search engines? Explain Plug Ins.   [12]

                              OR

What is a Firewall? Explain.   [12]

UNIT - II

4.   Write the significance of markup language and web graphics in detail.   [12]

                              OR

What are Frames, Frameset is HTML? Explain with example.   [12]

UNIT - III

5. Explain the following: [12]
   a) IFrame
   b) Layer Tag

OR

What are Cascading Style Sheets? What is CSS rule 'ruleset' and grouping? Explain. [12]

UNIT - IV

6. Explain the Java script object model in detail. [12]

OR

What do you mean by validation? Using JavaScript, validate an input-filed that contains an E-mail address? [12]

UNIT - V

7. Differentiate between PNG, GIF and TIFF Image File Format. Which are the main considerations to choose the necessary image file type? [12]

OR

What is CorelDraw? For what purpose we use this software? Explain five Perfect Shapes of coral draw. [12]

ഗ൭ഗ൭

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three-year scheme of 10 + 2 + 3 Pattern)
Paper - 236 - A
OBJECT ORIENTED PROGRAMMING CONCEPTS (Through C++)

Time : Three Hours]   *[Maximum Marks : 100*

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

Question paper consists of three Parts.
All THREE Parts are compulsory.

PART I: *(Very Short Answer) consists of 10 questions of two marks each. Maximum limit for each question is up to 40 words.*

PART II: *(Short Answer) consists of 5 questions of four marks each. Maximum limit for each question is up to 80 words.*

PART III: *(Long answer) consists of 5 questions of twelve marks each with internal choice.*

PART - I

1. a)   What are objects?
    b)   What is a class?
    c)   What is Data abstraction?
    d)   What are Tokens?
    e)   What are keywords?
    f)   What are data members and member functions?
    g)   Define Inline Function?
    h)   What is Derived class?
    i)   What is File?
    j)   Define Templates?

                                                          [10 × 2 = 20]

PART - II

2. a)   What is functional programming?

    b)   Define Pointer with suitable example?

    c)   What are Friend Functions? Write the syntax of Friend Function?

    d)   Write short notes on virtual base class?

    e)   What are streams?

                                                                    [5 × 4 = 20]

PART - III

3.   Define OOPs? Describe characteristics of OOPs.   [12]

                                OR

Describe object and class concept in detail?   [12]

4.   Describe Array in C++ in detail?   [12]

                                OR

What are operators? Explain its types.   [12]

5.   What is Constructor and Destructor? Explain various types of Constructor.[12]

                                OR

Write short notes on:-   [2 × 6 = 12]

    a)   Member Function.

    b)   This Pointer.

6. Explain the concept of polymorphism in detail? 236(A)

[12]

OR

Define Inheritance? Explain various types of Inheritance.

[12]

7. Define File system in C++? Describe basic operations of file system with suitable example.

[12]

OR

Define Exception Handling? Describe Exception Handling with suitable example.

[12]

x x x