BC-1876

BCA (Semester-II) Examination–2018

Programming C

Time: Three Hours

Maximum Marks: **75**

Note: Attempt questions from all the sections.

Section-A

(Short-Answer Type Questions)

Note: Attempt any ten questions. Each question carries 3 marks. **(3x10=30)**

1. What is the Static variable? Explain with example.

2. What is Entry control loop? Give example.

3. Define preprocessors directives with suitable example.

4. Explain formatted input/output functions in C? Give examples.

5. What is mixed mode expression? Explain with example.

6. Explain different Storage classes?

7. Write a function swap(int*int*) for interchanging value of two variables in main()?

8. What do you mean by dynamic memory allocation?

9. What is union? Explain its advantages over structure.

10. Explain recursive function with example.

11. Explain any 4 string manipulation function with example.

12. What is Conditional operator? Write a program to find the largest of 3 numbers.

13. Define command line argument in C with suitable examples.

14. Explain break and continue statements with examples.

15. Write a program in C to convert a given decimal number into binary number?

Section-B

(Long-Answer Type Questions)

Note: Attempt any three questions. Each question carries 15 marks. (15x3=45)

1. What is file handling in C? Explain various file handling modes and functions used in file handling with suitable programming example.

2. (a) What is array? Explain single and multi-dimensional array with example.

   (b) Write a program in C to multiply two matrices.

3. What is Structure? How it differs from union? Write a program in C demonstrating usages of structure.

4. (a) Write a program to input 10 values in an array. Categories each value as prime of composite.

(b) Write a program using pointers to search a value from an array.

5. Write the short note on the following –

(a) Enumerated Data types.

(b) Error handling in file operation.

(c) Conditional Directives.

BC-1877

BCA (Semester-II) Examination–2018
Digital Electronics & Comp. Organization

Time: Three Hours
Maximum Marks: 75

Note: Attempt questions from all the sections.

Section-A
(Short-Answer Type Questions)

Note: Attempt any ten questions. Each question carries 3 marks. **(3x10=30)**

1. Convert the following numbers:

   (i) Convert $(101011)_2$ to radix '16' (Hexadecimal).

   (ii) $(3576)_8$ to binary.

   (iii) $(135)_{10}$ to octal.

2. State and prove De-Morgan's theorem for two variables.

3. Draw the truth table of Ex-OR and Ex-NOR Gate.

4. Draw the truth table of negative logic and Gate.

5. What is De-Multiplexer?

6. Minimized the given function using K-Map.

$$F = \sum(3,5,6,7).$$

7. Design NAND Gate using 2x1 Mux.

8. Explain Cache memory.

9. Draw the Excitation table of S-R flip-flop.

10. Draw the Characteristic table of J-K flip-flop.

11. Write the classification of ROM.

12. Explain Half-adder.

13. Implement EX-OR Gate using NAND Gate.

14. What is Virtual memory?

15. Explain 8x1 Multiplexer.

Section-B
(Long-Answer Type Questions)

Note: Attempt any three questions. Each question carries 15 marks. (15x3=45)

1. (a) Design all logic gates using 4x1 multiplexer.

   (b) Implement the following Boolean function using 4x1 multiplexer.

$$Y = \sum m(0,1,4,5,7).$$

2. (a) Draw neat diagram of S-R flip-flop and also draw the state diagram and state table.

   (b) Find the value of 'x' if.

$$(211)_x = (152)_8.$$

3. (a) Draw and Explain Full adder using Half adder and OR Gate.

   (b) Explain 16x1 Multiplexer.

4. (a) Draw 2x4 Decoder using NAND Gate.

(b) Implement 16x1 multiplexer using 2x1 multiplexer.

5. (a) Write the advantages and disadvantages of digital circuit.

(b) Differentiate in between RAM, ROM, PLA PAL.

BC-24/1879

BCA (Semester-II) Examination–2018
Financial Accounting & Management

Time: Three Hours
Maximum Marks: **70**

Note: Attempt questions from all the sections.

Section-A
(Short Answer Type Questions)

Note: Attempt any seven questions. Each question carries 4 marks. (4x7=28)

1. Give the following information:
   Cash sales being 25% of total sales; purchases ₹24,500; credit sales ₹2,00,000 and cash sales ₹1,00,000 respectively. Excess of closing stock over opening stock ₹15,000. Calculate the gross profit ratio.

2. Define Accounting Standard.

3. What is difference between Management Accounting and Financial Accounting.

4. From the following information taken from the Balance Sheet of the company as on 31st march 2015 and 31st March 2016. You are required to calculate Fund from operation:

Particulars	31st March 2015	31 March 2016
Goodwill	40,000	30,000
Reserve	20,000	30,000
P/L A/c	50,000	60,000
Preliminary expenditure	10,000	5,000

5. Prepare the journal entries from following transactions:
   (i) Goods sold ₹20,000
   (ii) Salary paid ₹500
   (iii) Drawings ₹1,000

6. Write short note on nature of working capital theory.

7. Define 'explicit cost'.

8. Write short note on factors influencing the composition of working capital.

9. Define do you mean by Inventory.

10. Define Receivables.

Section-B

(Long Answer Type Questions)

Note: Attempt any two questions. Each question carries 21 marks. **(21x2=42)**

1. Prepare the financial statement from following information:

	₹		₹
Purchases	9000		
Stock	1600	Sales	13,000
Freight	125	P/R	80
S/R	60	Commission	40
Insurance	150	Provision for B.D.	75

Travelling exp.	360	Rent	40
Salaries	820	Loan	440
Bad Debts	30	Creditors	1160
Debtors	1700	B/O	200
Building	2400	Capital	3200
Machinery	1000		
Drawings	400		
B/R	450		
Bank	140		
	18,235		**18,235**

2. Write note on following:
   (i) Maching concept
   (ii) Money measurement concept

3. What is the role of computer in Accounting? Explain it.

4. Explain the 'capitalization' with example.

BC-25/1880

BCA (Semester-II) Examination–2018

Mathematics-II.

Time: Three Hours

Maximum Marks: **70**

Note: Attempt questions from all the sections.

Section-A

(Short Answer Type Questions)

Note: Attempt any ten questions. Each question carries 3 marks. **(3x10=30)**

1. Define power set. Write down all the possible subsets of A=[2,3].

2. Prove that $(A \cup B)' = A' \cap B'$

3. Using Venn diagram, for any two sets A and B, prove that :

$$n(A \cup B) = n(B) - n(A \cap B)$$

4. Draw the graph of the exponential function $f(x) = e^x$

5. Find domain and range of the function $f(x) = \sqrt{9 - x^2}$

6. Let A={1, 2, 3, 4, 6,7, 8, 9} and let ~ be the relation on AxA defined as (a,b)~ (c,d) if a+d=b+c, prove that ~ is an equivalence relation.

7. If R is an equivalence relation on A, then prove that R^{-1} is also equivalence relation on A.

8. If Z = f(x + ay) + Q(x - ay), prove that

$$\frac{\partial^2 z}{\partial y^2} = a^2 \frac{\partial^2 z}{\partial x^2}$$

9. Draw the Hass diagram of A={2, 3, 5, 30, 60, 120, 180, 360, '|'} relation is divisor i.e. a/b.

10. What do you understand by:

(a) Euler's theorem

(b) Onto function

(c) Poset

11. Find the area of ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$

12. Find equation of sphere whose center (-3, 4, 5) and radius 7.

13. Examine the maximum and minimum values of the function $u = x^2-3xy+y^2+2x$.

14. If $u = Sin^{-1}\left[\frac{x^2+y^2}{x+y}\right]$, then show that

$$x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}=\tan u$$

15. Find where the lines $\frac{x-1}{2}=\frac{y-2}{-3}=\frac{z+3}{4}$ meets the plane $2x+4y-z+1=0$

Section-B

(Long Answer Type Questions)

Note: Attempt any three questions. Each question carries 15 marks. **(15x3=45)**

1. Evaluate $\iiint z^2 dx.dy.dz$ over the sphere $x^2+y^2+x^2=1$

2. Show that the lines $\frac{x-5}{4}=\frac{y-7}{4}=\frac{z+3}{-5}$ and $\frac{x-8}{7}=\frac{y-4}{1}=\frac{z-5}{3}$ are coplanar. Also find their point of intersection and equation of the plane in which they lie.

3. (a) Show that the three points A(2,-1,3), B(4,3,1) and C(3,1,2) are collinear.

(b) Show that the equation $2x^2-6y^2-12z^2+18yz+2zx+xy=0$ represents a pair of planes and find the angle between them.

4. (a) In an examine, 56% of the candidates fails in English and 48% failed in Science. If 18% in both English and Science, find the percentage of those who passed in both the subjects.

(b) Find the area between parabolas $y^2=4ax$ and $x^2=4ay$.

5. If $z=\left(\frac{x^2+y^2}{x+y}\right)$. Show that

$$\left(\frac{\partial z}{\partial x}-\frac{\partial z}{\partial y}\right)^2=4\left(1-\frac{\partial z}{\partial x}-\frac{\partial z}{\partial y}\right)$$

6. (a) Distinguish between lattices, sublattices and complemented lattices.

(b) Prove that in a distributed lattice if an element has a complement then the complement is unique.