

N (Printed Pages 4)

(20517) Roll No.

BCA-II Sem.

18006

B.C.A. Examination, May 2017

C Programming

(BCA-202)

(New)

Time : Three Hours] [Maximum Marks : 75

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

Section-A

Note : Attempt **all** the **five** questions. Each question carries **3** marks. Very short answer is required not exceeding 75 words.

3x5=15

1. Explain the difference between array and structure. 3
2. Differentiate between *(arr+i) and (arr+i). 3

P.T.O.

3. Write a short note on nested structures. 3
4. Explain command line arguments in C using example. 3
5. How pointers are implemented with function with example. 3

Section-B

Note : Attempt any two questions:

6. Write the output: 7½

```
#include <stdio. h>
main ()
{
    int arr [ ] = {1, 2, 3, 4, 5};
    int i=1, j=2;
    Printf ("% d" *(arr+1+i));
    printf ("% d" *(arr+*(arr+1)));
    printf ("% d", *(arr+j));
    printf ("% d", *(arr+i)+*(arr+j));
}
```

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- 7. Write a program to interchange second element with last element of an array. 7½
- 8. Write short note on: 7½
 - (a) fopen ()
 - (b) fclose ()
 - (c) fgetc ()
 - (d) fprintf ()

Section-C

Note : Attempt any **three** questions.

- 9. (a) What is string? Write a program to find concatenate of two string using pointers without Library function. 7½+7½=15
- (b) Write a program using pointers to search a value from an array.
- 10. (a) Write a short note on conditional directives. 5+10=15
- (b) In a class there are 5 students. Each student is supposed to appear in 3 tests. Write a program using 2-D array to print.

- (i) the marks obtained by each student in different subjects.
- (ii) total marks and average obtained by each student.
- 11. (a) Explain different types of files in file handling and what are different modes to open a file? 10+5=15
- (b) Difference between structure and union. Explain how members of a union are accessed using a program code.
- 12. (a) What is file? Write C program to copy the contents of one file into another file. 7½+7½=15
- (b) Explain different bitwise shift operators use in C Programming.
- 13. (a) What is pointer? Explain pointer to pointer with example? Can we subtract two pointer variables. 7½+7½=15
- (b) Write a program to explain the use of structure with function.

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(20517) Roll No.....

B.C.A. - II Sem.

18007

B.C.A. Examination, May 2017

Digital Electronics and Computer

Organisation

(BCA-204)

(New)

Time : Three Hours] Maximum Marks : 75

Note : Attempt all the sections as per instructions.

Section-A

Note : Attempt all five questions. Each question carries three marks.

- 1. What is truth table? What is its significance? 3
- 2. What is multiplexers? 3

P.T.O.

- 3. Explain the Edge Triggered D Flip-Flops. 3
- 4. Why are NAND and NOR gates more popular? 3
- 5. Difference between Registers and Counters. 3

Section-B

Note : Attempt any two questions.

- 6. Reduce the following Boolean expression using K-Map. 7.5
 $F(P, Q, R, S) = \Sigma(0, 3, 5, 6, 7, 11, 12, 15)$
- 7. The 2732 is a 4096 x 8 EPROM. How many address line does it have? 7.5
- 8. Draw the master slave JK flip-flop and explain its working. 7.5

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Section-C

Note : Attempt any **three** questions.

9. (a) Explain the difference between cache memory and virtual memory. 7.5
- (b) Draw the Half adder Logic circuit and summarize the operation. 7.5
10. (a) State and verify De Morgan's Law in following Boolean Algebra. 7.5
- (b) Draw a Logic Circuit Diagram for the Boolean expression 7.5
- $$X : (Y'+Z)$$
11. (a) Explain the operation of the bi-directional shift register. 7.5
- (b) Explain how a J-K flip-flop can be converted into a D flip-flop. 7.5

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P.T.O.

12. Define the following : 3×5=15
- (a) Multiplexer (8×1) MUX Design
- (b) Register
- (c) Flip-Flop Application
- (d) Asynchronous Counter
- (e) Basic Cell of Static RAM
13. Write short notes on cache memory organization. 15

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(20517) Roll No.
BCA-II Sem.

18009

BCA Examination, May 2017
Financial Accounting and Management

(BCA-205)

(New)

Time : Three Hours] [Maximum Marks : 75

Note : Attempt **all** the sections as per instructions. Use of Calculator is not prohibited

Section-A

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

1. What is Break-even Point?
2. Define explicit cost and implicit cost.
3. What is fund flow statement? Explain.

P.T.O.

4. What is cost of capital? Explain its relevance in financial decisions.
5. Explain liquidity.

Section-B

Note: Attempt any **two** questions out of three. Each question carries **7.5** marks. Short answer is required not exceeding 200 words.

$7.5 \times 2 = 15$

6. Explain working capital management and the factors influencing the composition of working capital management.
7. What are the factors affecting cost of capital? Discuss weighted average cost of capital.
8. What are the objectives of inventory management?

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Section-C

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

- 9. Define economic order quantity (EOQ). How can it be computed? What are the limitations of the EOQ model?
- 10. What is the sound management policy for Accounts Receivable?
- 11. What are the objectives of financial management? Explain the long term sources of finance? <https://www.ccsustudy.com>
- 12. From the following data calculate :
 - (a) Gross Profit Ratio
 - (b) Net Profit Ratio
 - (c) Current Ratio
 - (d) Liquid Ratio

Sales Rs. 34,000; Sales Returns Rs. 4,000;
 Cost of Net Sales Rs. 20,000; Net Profit Rs. 3,000; Current Assets Rs. 6,000; Stock Rs. 1,000; Current Liabilities Rs. 2,000.

13. The following are extracts from the books of "A" Ltd. and "B" Ltd.

	A Ltd.	B Ltd.
Total Assets in Rs	10,00,000	20,00,000
Total Liabilities in Rs.	2,00,000	8,00,000
Owner's Equity in Rs.	8,00,000	12,00,000

Calculate Debt- Equity Ratio for each company.

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(20517) Roll No.....

BCA-II Sem.

18010

B.C.A. Examination, May 2017

MATHEMATICS - II

(BCA-201)

(New)

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 of this Section. Each question carries 3 marks.

$3 \times 5 = 15$

- Let $A = \{2, 3, 5\}$, $B = \{3, 6, 8\}$ & $C = \{4, 7, 9\}$. Show that $A \times (B \cap C) = (A \times B) \cap (A \times C)$
- Let Q be the set of rational numbers. Let $f : Q \rightarrow Q$ be defined by $f(x) = 2x + 3$. Show that f is bijective.

P.T.O.

- Show that the set of all factors of 12 under divisibility forms a lattice.
- If $U = f(y/x)$, show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 0$
- Find the direction cosines of the line segment joining the points $P(2, 3, -6)$ and $Q(3, -4, 5)$

Section-B

(Short Answer Questions)

Note : This section contains **three** questions, attempt any **two** questions. Each question carries $7\frac{1}{2}$ marks. $7\frac{1}{2} \times 2 = 15$

- Let Z be the set of integers, Define a relation R on I such that xRy if and only if $x-y$ is divisible by $5 \forall x, y \in Z$. Show that R is an equivalence relation.
- Evaluate $\int r^3 dr d\theta$ over the area bounded between the circles $r = 2\cos \theta$ & $r = 4\cos \theta$
- Change the independent variable x to z in the equation $(1 + x^2)^2 \frac{d^2y}{dx^2} + 2x(1 + x^2) \frac{dy}{dx} + y = x$ by the substitution $x = \tan z$

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Section-C

(Detailed Answer Questions)

Note : This section contains five questions, attempt any **three** questions. Each question carries 15 marks. $15 \times 3 = 45$

9. (i) Let $f : \mathbb{R} \rightarrow \mathbb{R}$ and $g : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $(fx) = x - 1$ and $g(x) = x^2 + 1$. Find $f \circ g(2)$, $g \circ f(2)$, $f \circ f(2)$ and $g \circ g(2)$.
- (ii) If R & S be equivalence relations in the set X , then prove that $R \cap S$ is an equivalence relation in X .
10. (i) Let (L, \leq) be a lattice and $a, b, c, d \in L$. Then show that $(a \wedge b) \vee (c \wedge d) \leq (a \vee c) \wedge (b \vee d)$
- (ii) $(a \wedge b) \vee (b \wedge c) \vee (c \wedge a) \leq (a \vee b) \wedge (b \vee c) \wedge (c \vee a)$
- (ii) Show that dual of a complemented lattice is complemented.
11. (i) If $V = f(x-y, y-z, z-x)$, then prove that $\frac{\partial V}{\partial x} + \frac{\partial V}{\partial y} + \frac{\partial V}{\partial z} = 0$

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P.T.O.

- (ii) If $u = \log \frac{x^4 + y^4}{x + y}$, show that

$$x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 3$$

12. (i) Find the equation to the plane passing through the four points $(0, -1, -1)$, $(4, 5, 1)$, $(3, 9, 4)$, $(-4, 4, 4)$
- (ii) Find the equation of the sphere which passes through the points $(1, -3, 4)$, $(1, -5, 2)$, $(1, -3, 0)$ and whose centre lies on the plane $x + y + z = 0$
13. (i) Evaluate the double integral $\int_{-a}^a \int_{\frac{-b}{a}\sqrt{a^2-x^2}}^{\frac{b}{a}\sqrt{a^2-x^2}} (x+y)^2 dx dy$
- (ii) Evaluate the triple integral $\iiint (x^2+y^2+z^2) dx dy dz$ where R denotes the region bounded by $x=0, y=0, z=0$ and $x+y+z = a, a > 0$

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