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BCA SEM I

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Question Papers

SHREE SATERI PISSANI EDUCATION SOCIETY'S
Shri. Gopal Gaonkar Memorial
GOA MULTI - FACULTY COLLEGE
DHARBANDORA, GOA
Semester End Examination - I, October 2015

Class: FY-BCA Sub: PROBLEM SOLVING AND PROGRAMMING CONCEPTS (BCA.101)

Max Marks: 50

Duration: 2 Hours

Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page

- Q.1 A) Complete the statement by using appropriate word(s). (5x1=5)
1. _____ are the circuits consisting of several components like transistors, resistors, and capacitors mounted on small Silicon chip.
 2. _____ phase involves deep understanding of how to arrive at the solution of the problem.
 3. _____ defines the order in which calculations involving two or more operators are performed.
 4. _____ symbol indicates the beginning (Start) and the ending (Stop) in a program's logic flow.
 5. _____ is the process of detecting and correcting program errors.
- Q.1. B) Answer the following. (5x1=5)
1. What is an Algorithm?
 2. Explain the term "Syntax Error".
 3. State any one advantage and disadvantage of Assembly Language.
 4. What are "Keywords" in C programming language?
 5. State any two features of C programming language.
- Q.2. Answer the following:
- A. State any four characteristics of First Generation computers. (02)
- B. Write an algorithm to take marks of five students and print the total. (03)
- X. Write a C program to exchange values of two variables using call by reference. (05)
- OR
- Y. Perform the radix conversion of the following: (05)
- a. $(500)_{10} = (?)_2$ b. $(348)_{10} = (?)_8$
- Q.3. Answer the following:
- A. What are recursive functions? Explain briefly. (02)
- B. Draw a flowchart to print the cube of 1 to 10 numbers. (03)
- X. Define array. Explain with example how to read values from an array. (05)
- OR
- Y. State any three advantages and two disadvantages of algorithm. (05)

Q.4. Answer the following: (02)

A. Explain the usage of the following storage classes: a) Static b) Auto.

B. Explain the working of Pre-increment and Post-increment operators. (03)

Guess the output of the following code:

```
void main( )  
{  
    int x=10;  
    ++x;  
    printf(“%d”, x++);  
}
```

X. Compare Structures and Unions in C. (05)

OR

Y. What is comment? Explain the types of comments. (05)

Q.5. Answer the following:

A. Write a C program to perform any of the arithmetic operation. (02)

B. Explain the usage of following functions:

a. strlen()

b. strcat()

(03)

X. State and explain different types of decision making constructs in C language. (05)

OR

Y. State the rules for constructing variable names. (05)

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GOA MULTI – FACULTY COLLEGE
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Semester End Examination - I, October 2015

Class: FY-BCA Sub: COMPUTER ORGANIZATION AND ARCHITECTURE (102)

Max Marks: 50

Duration: 2 Hours

-
- Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page
4) Draw Diagram wherever necessary.
-

Q1.A Select the appropriate option and rewrite the statement

(5*1=5)

i) A collection of lines that connects several devices is called
a) bus b) peripheral connection wires c) Both a and b d) internal wires

ii) PC Program Counter is also called
a) instruction pointer b) memory pointer c) data counter d) file pointer

iii) In a single byte how many bits will be there?
a) 8 b) 16 c) 4 d) 32

iv) CPU does not perform the operation
a) data transfer b) logic operation c) arithmetic operation d) all of the above

v) A microprogram written as string of 0's and 1's is a
a) Symbolic microinstruction b) binary microinstruction c) symbolic microinstruction d) binary micro-program

Q1.B Answer the following

(5*1)

- i) Define Processor clock.
- ii) Define Memory address register
- iii) Define BUS
- iv) Define Computer
- v) What is Volatile memory

Q2 Answer the following

(10)

A) Draw the basic functional units of a computer.

(2)

B) Briefly explain Primary storage and secondary storage

(3)

X) Explain Working of Control Unit

(5)

OR

Y) Explain the processor and memory architecture of Computer System

Q3) Answer the following

- A) Explain Input output Module
- B) Explain Von Neumann architecture

X) Explain different External Memory

OR

Y) Explain Cache memory

Q4) Answer the Following

- A) List the types of Registers
- B) Differentiate between Risc and Cisc

X) Explain technique of I/O module

OR

Y) Explain CPU structure and Function

Q5) Answer the following

- A) What is an Instruction Set
- B) Explain with the block diagram the DMA transfer in a computer system.
- X) Describe how the floating-point numbers are represented and used in digital arithmetic operations. Give an example. (5)

OR

Y) Explain 8086 Microprocessor Instruction Sets

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GOA MULTI – FACULTY COLLEGE
DHARBANDORA, GOA
Semester End Examination - I, October 2015

Class: FY-BCA

Sub: Business Accountancy (BCA103)

Max Marks: 50

Duration: 2 Hours

Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page

Q.1 A) Write an explanatory note on "Concept of Conservatism". (5x1=5)

B) What do you mean by Business Entity Concept? Explain in brief. (5x1=5)

Q.2. A) Journalize the following Transactions (10)

- i. Mr. Narayan started business with cash Rs. 35,000, stock Rs. 3,000, Furniture Rs. 25,000.
- ii. Purchased goods from Mr. Yanappa for Rs. 3,000.
- iii. Paid expenses Rs. 500.
- iv. Paid Mr. Yanappa on account Rs. 1,000.
- v. Sold goods to Mr. Tarun. for Rs. 4,000.
- vi. Paid wages Rs. 8000.
- vii. Received from Mr. Tarun in full settlement of his account Rs. 3,900.

OR

X) Define Accounting. What are the types of Accounts? Explain the golden rule of Accountancy with suitable examples. (10)

Q.3. A) From the following ledger balances of Mr. Amonkar's Family, prepare a trial Balance (10)

Expenses for vegetables	2300
Expenses for Fish, Eggs, etc	3700
Expenses for food grains	4100
Expenses for spices & groceries	1900
Expenses for stationary & provisions	2700
Children education expenses	5100
Income from salary	19000
Income from investments	2000
Cash in hand	1200

OR

X) Discuss the errors, which are not discoverable by a Trail balance. (10)

Q.4. A) What is Depreciation? Discuss its features and Accounting treatment. (10)

OR

X) What do you mean by Capital Receipt and Revenue Receipt? What are the criteria to define whether a receipt is Capital in nature or not? Differentiate between Capital & Revenue Receipt. (10)

Q.5. A) What is a Balance Sheet? Prepare a hypothetical Balance Sheet with the items included in it. Also distinguish between Gross Profit & Net Profit (10)

OR

X) The Authorised Capital of a company is Rs. 1,00,000 shares of Rs. 10 each. On 10th April 2015, 5000 shares were issued for subscription at a premium of Rs. 2 per share. The share money is payable as follows: Rs. 5 (Including Premium) with application, Rs. 3 on Allotment, Rs. 2 on First Call & Rs. 2 in Final Call. The shares were fully subscribed and application money was received in full. The allotment money was received by June 30th except for 500 shares. The first call and the final call money was received by 30th September and 31st December barring the final call money of 200 shares. Pass the journal entries and show the cash account. (10)

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Semester End Examination - I, October 2015

Class: FY-BCA

Sub: Basic Mathematics

Max Marks: 50

Duration: 2 Hours

- Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page
4) Use of calculators are allowed

Q.1 A) Answer the following

(5x1=5)

- i. Area of a circle is _____
- ii. $\int_0^1 e^x dx$ is _____
- iii. If a line passes through (2, 0) and (0, -4) then its equation is _____
- iv. The sum of first n term of an A.P. is _____
- v. If $B = \begin{bmatrix} 3 & 4 & 5 \end{bmatrix}$ then the order of matrix is _____

(5x1=5)

B) Answer the following

- i. For an G.P $9, \frac{9}{2}, \frac{9}{4}, \frac{9}{8}$ what is the value of a and r ?
- ii. If $y = \sqrt{x^4}$ then $y' =$ _____
- iii. $\lim_{x \rightarrow 3} x^4 =$ _____
- iv. Consumer's surplus is given by _____
- v. The conjugate of $-1+i$ is _____

Q.2. Answer the following:

(10)

A) i. Solve the equation by cramer's rule
 $x-y+2z = 9, 2x-5y+3z = 18, 6x+7y+10z = 35$

ii. Discus the continuity at $x = 2$ of

$$f(x) = \begin{cases} x^2-1 & 0 \leq x \leq 2 \\ x+1 & 2 < x \leq 4 \end{cases}$$

OR

B) i. Find $\frac{dy}{dx}$ for $y = \frac{x^2+2x-15}{e^x}$

(10)

ii. Find $\lim_{x \rightarrow 2} \frac{\sqrt{x+2}-2}{x^2-4}$ (10)

Q.3. Answer the following:

A) i. If $A = \begin{bmatrix} 2 & 1 \\ -1 & 3 \end{bmatrix}$ $B = \begin{bmatrix} -3 & 2 \\ 4 & 1 \end{bmatrix}$ $C = \begin{bmatrix} 5 & -2 \\ 1 & 3 \end{bmatrix}$

Verify a) $(A+B)+C = A+(B+C)$
 b) $3(A-B) = 3A - 3B$

ii. For an A.P with the 1st term as 3 and common difference as 5,
 Find T_n and S_n when $n = 8$.

OR

B) i. Evaluate $\int_0^5 \frac{x^2-5x+6}{x-3} dx$ (10)

ii. Find y' for $y = e^{\sqrt{x}}$

(10)

Q.4. Answer the following:

A) i. Find inverse of the matrix A

If $A = \begin{bmatrix} 3 & 2 \\ 4 & 0 \end{bmatrix}$

ii. For an G.P 2, 10, 50, 250,..... Find T_n and S_n when $n = 6$.

OR

B) i. The supply function for a certain commodity is $p = 100 - 5x$.
 Find the producer's surplus at $x = 4$. (10)

ii. If A (1, -2), B (-2, 3) and C (2, -5) are the vertices of a triangle ABC,
 Find the equation of the altitude AM.

Q.5. Answer the following:

(10)

A) i. Show that $\begin{vmatrix} 1 & x & x^2 - yz \\ 1 & y & y^2 - zx \\ 1 & z & z^2 - xy \end{vmatrix} = 0$.

ii. If A = (6, 1), B = (-1, 8) and C (3, -2) from a ΔABC , show that ΔABC is right angled.

OR

B) i. Evaluate $\int_1^3 \frac{x^2+3x+2}{x+1} dx$ (10)

ii. The x-intercept of a line is double its y-intercept. If it passes through (2, -4)
 then find its equation.

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DHARBANDORA, GOA
Semester End Examination - I, October 2015

Class: FY-BCA

Sub: Environmental Studies (BCA107)

Max Marks: 25

Duration: 1 Hours

Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page

Q.1 Explain the following questions in brief (ANY FIVE) {5*3=15}

1. The need of public awareness regarding various environmental problems.
2. Relationship between economic development and resources
3. Importance of forest.
4. Aquatic ecosystem.
5. Role of biodiversity.
6. Highlight the measures to conserve mineral resources.

Q2 (A) Explain food web and food chain. {05}

OR

(B) Explain the structure of ecosystem {05}

Q.3 (A) Enunciate on impact of mining activities on environment. {05}

OR

(B) Elucidate on Ex-Situ measures of conservation of bio-diversity. {05}

Sem - 2016



Roll No: _____

Total No. of Questions: 3

Total No. of pages: 1

B.C.A Semester End Examination, October 2016

ENVIRONMENTAL STUDIES (B.C.A 107)

Semester: I

Duration: 1Hr 30 Min

Max. Marks: 40

-
- Instruction:**
- 1) All questions are compulsory.
 - 2) Figures to right indicate marks.
 - 3) Start each new question on ne page.
 - 4) Draw the figures wherever necessary
-

- Q 1.A Explain the following questions in brief ANY FIVE (5×3=15)**
1. Consequences of Dams (3Marks)
 2. Importance of Soil resources (3Marks)
 3. Causes of Deforestation (3Marks)
 4. Tropic levels (3Marks)
 5. In situ conservation of biodiversity (3Marks)
 6. Concept and structure of ecosystem (3Marks)
 7. Carbon cycle (3Marks)

Q 2.A State the Future sources of energy. (5marks)

OR

Q 2.B Enunciate on Impact of agriculture on environment. (5marks)

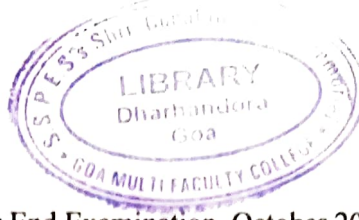
Q 3.A Enunciate the small hydropower's (5 marks)

OR

Q 3.B Elucidate on water wars. (5marks)

Roll. No.: _____

Total No. of Questions: 5



Total No. of Pages: 02

B.C.A. Semester End Examination, October 2016

PROBLEM SOLVING AND PROGRAMMING CONCEPTS (BCA101)

Duration: 2 Hours

SEM - I

Max. Marks: 50

-
- Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page
-

Q.1 A. Complete the statement by using appropriate word(s). (5x1=5)

1. ULSI stands for _____.
2. _____ phase involves deep understanding of how to arrive at the solution of the problem.
3. _____ are pre-defined words in programming language whose meanings are known to the compilers of that language.
4. _____ is a step-by-step description of how to solve the given problem.
5. _____ is the process of detecting and correcting errors.

Q.1. B. Answer the following. (5x1=5)

1. What are pointers in C programming?
2. Explain the term "Syntax Error".
3. State any two features of first generation computers.
4. What do you mean by a function prototype?
5. State any two user defined data types?

Q.2. Answer the following:

- A. Explain the usage of the following storage classes: a) Register b) Static. (02)
- B. State any three benefits of using functions in programming. (03)
- X. Write a C program to print the factorial of a number using recursive function. (05)

OR

Y. Compare entry-loops with exit-loops. Give examples. (05)

Q.3. Answer the following:

- A. State the usage of: a) `#include<stdio.h>` b) `#include<math.h>` (02)
- B. Explain the usage of following functions:
- a) `fopen()` b) `fclose()` (03)

P.T.O.

X. Draw a flowchart to print whether a number is even number or odd number. (05)

OR

Y. Write a C program to find the product of two values and print using **call by reference**. (05)

T. 113.

Q.4. Answer the following:

A. State the need of comments in programming. (02)

B. Write a short note on top-down approach in problem solving. (03)

X. Compare unions with structures. Give example for each. (05)

OR

Y. Write a C program to store your name in an array and print the alternate letters. (05)

Q.5. Answer the following:

A. What is a string? State any two string functions. (02)

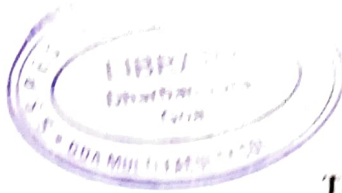
B. What is conditional operator? Give appropriate example to show its usage. (03)

X. Write an algorithm to print the result of $a+b$ if a is even or $a*b$ if a is odd. (05)

OR

Y. State the rules for constructing Integer point constants. (05)

Roll No: _____



Total No. of Questions: 05

Total No. of pages: 02

B.C.A Semester End Examination, October 2016

Computer Organization and Architecture(102)

Semester: I

Duration: 02 Hours

Max. Marks: 50

- Instructions:**
- 1) Figures to the right indicate maximum marks.
 - 2) Provide sufficient margin space in the answer-book for recording marks
 - 3) Enter the appropriate main & sub-question numbers in the answer-book.
 - 4) Draw diagram wherever necessary.

Q.1 A) Select the appropriate option and rewrite the statement (5x1=5)

1) In a single byte _____ bits are there.

- a) 16 b) 32 c) 8 d) 32

2) The first microprocessor in the year _____

- a) 1970 b) 1971 c) 1972 d) 1974

3) 4th Generation Intel Core processor, more advanced, faster and new line of low-power processor, have arrived in _____.

- a) 2014 b) 2013 c) 2012 d) 2011

4) A _____ is used to connect a peripheral device to a hardware component.

- a) Connector b) Hardware c) software d) hard disk

5) _____ is the main circuit board in the computer system

- a) RAM b) Motherboard c) CPU d) SMPS

B) Answer the following (5x1=5)

- 1) Define BUS
- 2) Define Microprocessor
- 3) What are the main functions performed by computer system
- 4) Define CPU
- 5) Define Instruction Sets

Q.2 A) Draw the block diagram of a computer system (02)

- B) Explain Von Neumann architecture with diagram (03)
C) Explain the types of ROM (05)

OR

- C) Explain the term System Bus in detail (05)
Q.3 A) Convert 56 in Binary form and also 2^s Complement (02)
B) Explain the term Magnetic Disk (03)
C) Explain Cache Memory (05)

OR

- C) Explain the functions of DMA with diagram (05)

Q.4.A) Mention the names of essential tools required for assembly language(02)

- B) Draw Block Diagram of I/O module (03)
C) Explain any four Addressing modes in detail (05)

OR

- C) What are the functions of I/O module in detail (05)

Q.5. A) Distinguish between Machine language and Assembly language(02)

- B) What are the functions of Control Unit (03)
C) Discuss RAID levels in detail (05)

OR

- C) Explain different types of registers (05)



Sateri Pissani Education Society's
Shree Gopal Gaonkar Memorial
Goa Multi Faculty College, Dharbandora - Goa
Semester End Examination-I, October 2016

Class: F.Y.BCA

Semester: I

Sub: Basic Mathematics

Max Marks: 50

Duration: 2 hour

Instructions: 1) All Questions are Compulsory.

2) Figures to right indicate marks.

3) Start each new question on a fresh page.

4) Programmable calculators are not allowed.

Q.1 A) Answer the following

(5x1=5)

i. Define row matrix.

ii The conjugate of $-1+i$ is _____

iii. If $y = \sqrt{x}$ then $y' =$ _____

iv. The sum of first n term of an A.P. is _____

v. Area of a circle is _____

B) Answer the following

(5x1=5)

i. Producer's surplus is given by _____

ii. If a line has point (2, 3) and y-intercept 3 then its equation is _____

iii. $\lim_{x \rightarrow 4} \frac{7x}{2} =$ _____

iv. For an G.P $3, \frac{3}{2}, \frac{3}{4}, \frac{3}{8}$ what is the value of a and r ?

v. $\int_0^1 \log x \, dx$ is _____

(10)

Q.2. Answer the following:

A) i. Find inverse of the matrix A

$$\text{If } A = \begin{bmatrix} 3 & 2 \\ -1 & 2 \end{bmatrix}$$

ii. If the 5th term of an A.P. is 35 and its 9th term is 59 then find its nth term .

OR

B) i. The supply function for a certain commodity is $p = 3x^2 + 5$.
Find the producer's surplus at $x = 5$.

ii. If $A = (2, -2)$ and $B = (5, y)$, find the possible value of y so that $AB = 5$.

(10)

(10)

Q.3. Answer the following:

A) i. Find the value of the determinant $\begin{vmatrix} 13 & 16 & 19 \\ 14 & 17 & 20 \\ 15 & 18 & 21 \end{vmatrix}$

ii. If $A = (6, 1)$, $B = (-1, 8)$ and $C = (3, -2)$ from a ΔABC , show that ΔABC is right angled.

OR

B) i. Evaluate $\int \frac{x^2 + 3x - 10}{x(x+5)} dx$

(10)

ii. By using slopes $(8, 3)$, $(2, -1)$, $(0, 1)$ and $(6, 5)$ are vertices of a parallelogram.

Q.4. Answer the following:

(10)

A) i. Solve the equation by cramer's rule

$$x + 2y + z = 4, \quad 2x - y + z + 1 = 10, \quad x + y - z = 4$$

ii. If f is continuous at $x = 2$

$$f(x) = \begin{cases} x^2 - x + 1 & 0 \leq x \leq 2 \\ 5x + a & 2 < x \leq 4 \end{cases}$$

$$0 \leq x \leq 2$$

$$2 < x \leq 4, \text{ then find value of } a.$$

OR

B) i. The demand function $p = 30 + 12D - 4D^2$. Find total revenue, average revenue and marginal revenue when demand is 4 units.

(10)

ii. Find $\lim_{x \rightarrow 2} \left[\frac{1}{x^2 + x - 6} + \frac{1}{x^2 - 9x + 14} \right]$



Q.5. Answer the following:

A) i. If $A = \begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 0 \\ -1 & 4 \end{bmatrix}$

(10)

Find matrix X , such that $AX = B$.

ii. For 2, 10, 50, 250, find T_n and S_n . Also calculate T_6 and S_6 .

OR

B) i. Find $\int_1^3 \frac{x^2 + 3x + 2}{x + 1} dx$

(10)

ii. Find y' for $y = \frac{(x-1)^2}{e^x}$

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DHARBANDORA, GOA
Semester End Examination - I, October 2015



Class: FY-BCA

Sub: Environmental Studies (BCA107) .

Max Marks: 25

Duration: 1 Hours

-
- Instruction: 1) All Questions are Compulsory
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3) Start each new question on a fresh page
-

- Q.1 Explain the following questions in brief (ANY FIVE) {5*3=15}
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 4. Aquatic ecosystem.
 5. Role of biodiversity.
 6. Highlight the measures to conserve mineral resources.

Q2 (A) Explain food web and food chain. {05}

OR

(B) Explain the structure of ecosystem {05}

Q.3 (A) Enunciate on impact of mining activities on environment. {05}

OR

(B) Elucidate on Ex-Situ measures of conservation of bio-diversity. {05}

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DHARBANDORA, GOA
Semester End Examination - I, October 2015

Class: FY-BCA

Sub: Basic Mathematics

Max Marks: 50

Duration: 2 Hours

- Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
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4) Use of calculators are allowed

Q.1 A) Answer the following (5x1=5)

i. Area of a circle is _____

ii. $\int_0^1 e^x dx$ is _____

iii. If a line passes through (2, 0) and (0, -4) then its equation is _____

iv. The sum of first n term of an A.P. is _____

v. If $B = \begin{bmatrix} 3 & 4 & 5 \end{bmatrix}$ then the order of matrix is _____

B) Answer the following (5x1=5)

i. For an G.P $9, \frac{9}{2}, \frac{9}{4}, \frac{9}{8}$ what is the value of a and r ?

ii. If $y = \sqrt{x^4}$ then $y' =$ _____

iii. $\lim_{x \rightarrow 3} x^4 =$ _____

iv. Consumer's surplus is given by _____

v. The conjugate of $-1+i$ is _____

Q.2. Answer the following: (10)

A) i. Solve the equation by cramer's rule

$$x-y+2z = 9, \quad 2x-5y+3z = 18, \quad 6x+7y+10z = 35$$

ii. Discus the continuity at $x = 2$ of

$$\begin{array}{ll} f(x) = x^2-1 & 0 \leq x \leq 2 \\ = x+1 & 2 < x \leq 4 \end{array}$$

OR

B) i. Find $\frac{dy}{dx}$ for $y = \frac{x^2+2x-15}{e^x}$

(10)

ii. Find $\lim_{x \rightarrow 2} \frac{\sqrt{x+2}-2}{x^2-4}$ (10)

Q.3. Answer the following:

A) i. If $A = \begin{bmatrix} 2 & 1 \\ -1 & 3 \end{bmatrix}$ $B = \begin{bmatrix} -3 & 2 \\ 4 & 1 \end{bmatrix}$ $C = \begin{bmatrix} 5 & -2 \\ 1 & 3 \end{bmatrix}$

Verify a) $(A+B)+C = A+(B+C)$
 b) $3(A-B) = 3A - 3B$

ii. For an A.P with the 1st term as 3 and common difference as 5,
 Find T_n and S_n when $n = 8$. (10)

OR

B) i. Evaluate $\int_0^5 \frac{x^2-5x+6}{x-3} dx$

ii. Find y' for $y = e^{\sqrt{x}}$ (10)

Q.4. Answer the following:

A) i. Find inverse of the matrix A

If $A = \begin{bmatrix} 3 & 2 \\ 4 & 0 \end{bmatrix}$

ii. For an G.P 2, 10, 50, 250,..... Find T_n and S_n when $n = 6$.

OR

B) i. The supply function for a certain commodity is $p = 100 - 5x$.
 Find the producer's surplus at $x = 4$. (10)

ii. If A (1, -2), B (-2, 3) and C (2, -5) are the vertices of a triangle ABC,
 Find the equation of the altitude AM. (10)

Q.5. Answer the following:

A) i. Show that $\begin{vmatrix} 1 & x & x^2 - yz \\ 1 & y & y^2 - zx \\ 1 & z & z^2 - xy \end{vmatrix} = 0$.

ii. If A = (6, 1), B = (-1, 8) and C (3, -2) form a ΔABC , show that ΔABC is right angled. (10)

OR

B) i. Evaluate $\int_1^3 \frac{x^2+3x+2}{x+1} dx$ (10)

ii. The x-intercept of a line is double its y-intercept. If it passes through (2, -4) then find its equation.



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GOA MULTI - FACULTY COLLEGE
DHARBANDORA, GOA
Semester End Examination - I, October 2015

Class: FY-BCA

Sub: Business Accountancy (BCA103)

Max Marks: 50

Duration: 2 Hours

Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page

Q.1 A) Write an explanatory note on "Concept of Conservatism". (5x1=5)

B) What do you mean by Business Entity Concept? Explain in brief. (5x1=5)

Q.2. A) Journalize the following Transactions (10)

- i. Mr. Narayan started business with cash Rs. 35,000, stock Rs. 3,000, Furniture Rs. 25,000.
- ii. Purchased goods from Mr. Yanappa for Rs. 3,000.
- iii. Paid expenses Rs. 500.
- iv. Paid Mr. Yanappa on account Rs. 1,000.
- v. Sold goods to Mr. Tarun. for Rs. 4,000.
- vi. Paid wages Rs. 8000.
- vii. Received from Mr. Tarun in full settlement of his account Rs. 3,900.

OR

X) Define Accounting. What are the types of Accounts? Explain the golden rule of Accountancy with suitable examples. (10)

Q.3. A) From the following ledger balances of Mr. Amonkar's Family, prepare a trial Balance (10)

Expenses for vegetables	2300
Expenses for Fish, Eggs, etc	3700
Expenses for food grains	4100
Expenses for spices & groceries	1900
Expenses for stationary & provisions	2700
Children education expenses	5100
Income from salary	19000
Income from investments	2000
Cash in hand	1200

OR

X) Discuss the errors, which are not discoverable by a Trail balance. (10)

Q.4. A) What is Depreciation? Discuss its features and Accounting treatment. (10)

OR

X) What do you mean by Capital Receipt and Revenue Receipt? What are the criteria to define whether a receipt is Capital in nature or not? Differentiate between Capital & Revenue Receipt. (10)

Q.5. A) What is a Balance Sheet? Prepare a hypothetical Balance Sheet with the items included in it. (10)
Also distinguish between Gross Profit & Net Profit

OR

X) The Authorised Capital of a company is Rs. 1,00,000 shares of Rs. 10 each. On 10th April 2015, 5000 shares were issued for subscription at a premium of Rs. 2 per share. The share money is payable as follows: Rs. 5 (Including Premium) with application, Rs. 3 on Allotment, Rs. 2 on First Call & Rs. 2 in Final Call. The shares were fully subscribed and application money was received in full. The allotment money was received by June 30th except for 500 shares. The first call and the final call money was received by 30th September and 31st December barring the final call money of 200 shares. Pass the journal entries and show the cash account. (10)



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DHARBANDORA, GOA
Semester End Examination - I, October 2015

Class: FY-BCA

Sub: COMPUTER ORGANIZATION AND ARCHITECTURE (102)

Max Marks: 50

Duration: 2 Hours

- Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page
4) Draw Diagram wherever necessary.

Q1.A Select the appropriate option and rewrite the statement

(5*1=5)

- i) A collection of lines that connects several devices is called
a) bus b) peripheral connection wires c) Both a and b d) internal wires
- ii) PC Program Counter is also called
a) instruction pointer b) memory pointer c) data counter d) file pointer
- iii) In a single byte how many bits will be there?
a) 8 b) 16 c) 4 d) 32
- iv) CPU does not perform the operation
a) data transfer b) logic operation c) arithmetic operation d) all of the above
- v) A microprogram written as string of 0's and 1's is a
a) Symbolic microinstruction b) binary microinstruction c) symbolic microinstruction d) binary micro-program

Q1.B Answer the following

(5*1)

- i) Define Processor clock.
- ii) Define Memory address register
- iii) Define BUS
- iv) Define Computer
- v) What is Volatile memory

Q2 Answer the following

(10)

- A) Draw the basic functional units of a computer. (2)
- B) Briefly explain Primary storage and secondary storage (3)
- X) Explain Working of Control Unit (5)

OR

Y) Explain the processor and memory architecture of Computer System

(5)

Q3) Answer the following

(10)

(2)

(3)

(5)

A) Explain Input output Module

B) Explain Von Neumann architecture

X) Explain different External Memory

OR

(5)

Y) Explain Cache memory

(10)

Q4) Answer the Following

(2)

A) List the types of Registers

(3)

B) Differentiate between Risc and Cisc

(5)

X) Explain technique of I/O module

OR

Y) Explain CPU structure and Function

(5)

Q5) Answer the following

(10)

A) What is an Instruction Set

(2)

B) Explain with the block diagram the DMA transfer in a computer system.

(3)

X) Describe how the floating-point numbers are represented and used in digital arithmetic operations. Give an example.

(5)

OR

Y) Explain 8086 Microprocessor Instruction Sets

(5)

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DHARBANDORA, GOA



Class: FY-BCA Sub: PROBLEM SOLVING ANG PROGRAMMING CONCEPTS (BCA.101)

Max Marks: 50

Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page

Duration: 2 Hours

- Q.1 A) Complete the statement by using appropriate word(s). (5x1=5)
- _____ are the circuits consisting of several components like transistors, resistors, and capacitors mounted on small Silicon chip.
 - _____ phase involves deep understanding of how to arrive at the solution of the problem.
 - _____ defines the order in which calculations involving two or more operators are performed.
 - _____ symbol indicates the beginning (Start) and the ending (Stop) in a program's logic flow.
 - _____ is the process of detecting and correcting program errors.

Q.1. B) Answer the following.

- What is an Algorithm? (5x1=5)
- Explain the term "Syntax Error".
- State any one advantage and disadvantage of Assembly Language.
- What are "Keywords" in C programming language?
- State any two features of C programming language.

Q.2. Answer the following:

- State any four characteristics of First Generation computers. (02)
- Write an algorithm to take marks of five students and print the total. (03)
- Write a C program to exchange values of two variables using call by reference. (05)

OR

- Perform the radix conversion of the following: (05)
 - $(500)_{10} = (?)_2$
 - $(348)_{10} = (?)_8$

Q.3. Answer the following:

- What are recursive functions? Explain briefly. (02)
- Draw a flowchart to print the cube of 1 to 10 numbers. (03)
- Define array. Explain with example how to read values from an array. (05)

OR

- State any three advantages and two disadvantages of algorithm. (05)

- Q.4. Answer the following:
- A. Explain the usage of the following storage classes: a) Static (02)
b) Auto. (03)
- B. Explain the working of Pre-increment and Post-increment operators. (03)

Guess the output of the following code:

```
void main( )  
{  
    int x=10;  
    ++x;  
    printf("%d", x++);  
}
```

(05)

X. Compare Structures and Unions in C.

OR

Y. What is comment? Explain the types of comments.

(05)

Q.5. Answer the following:

- A. Write a C program to perform any of the arithmetic operation. (02)
- B. Explain the usage of following functions:

a. strlen()

b. strcat()

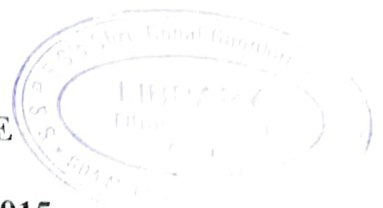
(03)

X. State and explain different types of decision making constructs in C language. (05)

OR

Y. State the rules for constructing variable names. (05)

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DHARBANDORA, GOA
Semester End Examination - I, APRIL 2015



Sub: OPERATING SYSTEMS CONCEPTS (BCA202)

Class: F.Y.BCA
Max marks: 50

Duration: 2 Hours

- Instruction: 1) All Questions are Compulsory
2) Figures to right indicate marks
3) Start each new question on a fresh page

A) Answer the following in one or two lines (5 Marks)

1. What is an Operating System?
2. Define process
3. List any four file attributes.
4. Define Tracks.
5. What are the three types of multithreading models?

B) State True or False for the following statements (5 Marks)

1. Bootstrap loader is executed when a system is first turned on or restarted.
2. First-Come First-Serve policy is most suitable for a time-shared operating system.
3. Swapping is a technique of temporarily removing inactive programs from the memory of computer system.
4. Banker's algorithm for resource allocation deals with deadlock recovery.
5. Access time is the time required by a sector to reach below read/write head.

Answer the following: (10 Marks)

- a) What are the basic elements of a computer system? (2 Marks)
- b) Elucidate any three OS services. (3 Marks)
- c) Describe any two process scheduling algorithms in detail (5 Marks)

Answer the following: (10 Marks)

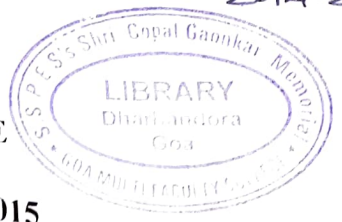
- a) Write general structure of a critical section problem. (2 Marks)
- b) Depicts the various process state in detail (3 Marks)
- c) Discuss the swapping concepts in memory management. (5 Marks)

Answer the following: (10 Marks)

- a) Differentiate Sequential access and Direct access (2 Marks)
- b) How many page faults occur for FIFO page replacement algorithm for the following reference string with four page frames? (3 Marks)
1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9, 5, 4, 5, 4, 3
- c) Explain paging concepts in memory management strategies (5 Marks)

Answer the following: (10 Marks)

- a) What is distributed system? (2 Marks)
- b) Write any three program threats in detail (3 Marks)
- c) Discuss the Redundant Array of Inexpensive Disks levels in detail. (5 Marks)



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Semester End Examination - I, APRIL 2015

Sub: DATA STRUCTURES (BCA201)

Duration: 2 Hours

Class: F.Y.BCA

Max marks: 50

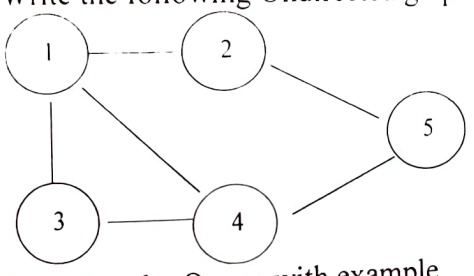
- Instruction:
- 1) All Questions are Compulsory
 - 2) Figures to right indicate marks
 - 3) Start each new question on a fresh page

- Q1. A) Answer the following in one or two lines
1. What is Data Structures? (5 Marks)
 2. Define Arrays and syntax for one dimensional array.
 3. What is sorting?
 4. What is balanced binary tree?
 5. Define Tree.

- B) State True or False for the following statements (5 Marks)
1. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as a Stack.
 2. A full binary tree with n leaves contains n nodes.
 3. The quick sort algorithm exploit divide and conquer design technique
 4. A linear collection of data elements where the linear node is given by means of pointer is called Linked list
 5. A B-tree of minimum degree t can maximum t pointers in a node

- Q2. Answer the following: (10 Marks)
- a) What is complete binary tree? (2 Marks)
 - b) Flucidate three efficiency considerations in detail. (3 Marks)
 - c) Describe Insertion sort with example (5 Marks)

- Q3. Answer the following: (10 Marks)
- a) Write the following Undirected graph adjacency list: (2 Marks)



- b) Describe the Queue with example (3 Marks)
- c) Discuss three asymptotic notations in detail. (5 Marks)

- Q4. Answer the following: (10 Marks)

- a) Draw inorder traversals expression tree. (2 Marks)
Inorder traversal yields: $a+b*c+d*e+f*g$ (3 Marks)
- b) Depicts Binary tree traversals. (5 Marks)
- c) Explain Bubble sort with example (10 Marks)

- Q5. Answer the following: (2 Marks)

- a) Define close hashing (3 Marks)
- b) Explain max heap sort with example (5 Marks)
- c) Discuss singly linked list with example