



ARKA JAIN University, Jharkhand

2nd Semester Final Examination – 2017-18

Subject : Numerical & Statistical Methods

Course: BCA

Full Marks : 70

Pass Marks: 28

Time : 3 Hours

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
- **Part- B** contains **SIX** questions out of which **FOUR** questions are to be answered.
- **Part- C** contains **SIX** questions out of which **THREE** questions are to be answered.

PART A

Q.1) All questions are compulsory

(10x1=10)

- a) Round off value of number 3.26425 correct up to four significant figures is
- 3.264
 - 3.26400
 - 3264
 - 326400
- b) Truncating error occurs due to
- Error occurs due to error in statement
 - Errors due to rounding off the numbers
 - Errors due to replacing infinite series by finite one.
 - None of these
- c) The relative error in taking $\pi = 3.141593$ as $\frac{22}{7}$?
- 0.1234
 - 0.0004
 - 0.0024
 - None of these
- d) System of linear equation has unique solution if the coefficient matrix A have
- $|A|=0$
 - $|A| \neq 0$
 - $\text{Adj}(A)B=0$
 - None of these
- e) If c is any constant then $\Delta c = ?$
- 0
 - 1
 - Not defined
 - None of these
- f) A fair coin is tossed 6 times .what is the probability of getting atleast 3 heads
- 11/16
 - 21/32
 - 3/4
 - 5/6

g) What is the mean of the number of tails in two tosses of a coin.

- i) 1
- ii) $1/2$
- iii) $3/4$
- iv) None of these

h) $\nabla f(x) = ?$

- i) $f(x) - f(x-h)$
- ii) $f(x) = f(x-h)$
- iii) $f(x) + f(x-h)$
- iv) of these 4

i) the regression line y on x is defined as

- i) $y - \bar{y} = b_{yx}(x - \bar{x})$
- ii) $x - \bar{x} = b_{xy}(y - \bar{y})$
- iii) $y = b_{yx}x$
- iv) none of these

j) $\nabla^2 y_2 = ?$

- i) $y_2 - 2y_1 + y_0$
- ii) $y_3 - y_2$
- iii) $y_3 + y_2$
- iv) none of these

B] Very Short question

(5x2=10)

- a) Prove that $\Delta \log f(x) = \log \left[1 + \frac{\Delta f(x)}{f(x)} \right]$.
- b) Define absolute error?
- c) write down the formula of Newton's backward difference formula?
- d) A coin is tossed 4 times what is the probability to get two heads?
- e) Evaluate $\Delta \tan^{-1} x$.

PART B

Q2. Answer any four:

(4x5=20)

i) find the cubic polynomial which takes following values

| | | | | |
|-------|---|---|---|----|
| X: | 0 | 1 | 2 | 3 |
| F(x): | 1 | 2 | 1 | 10 |

Using Newton's forward difference interpolation formula. find $f(4)$ and $f'(4)$.

ii) Solve the equation $xe^x = \cos x$. By regula falsi method correct up to 4 decimal places

iii) Evaluate $\int_0^1 \frac{dx}{1+x}$ by dividing the range into 10 equal parts

iv) Using Taylor's series method, find the value of $y(0.1)$ given $\frac{dy}{dx} = x^2 + y^2$ and $y(0) = 1$

v) find $y'(0)$ and $y''(0)$ from the following table

| | | | | | | |
|----|---|---|----|---|---|---|
| x: | 0 | 1 | 2 | 3 | 4 | 5 |
| y: | 4 | 8 | 15 | 7 | 6 | 2 |

vi) the probability that a bomb dropped from a plane will strike the target is $1/5$. If six bomb are dropped find the probability that (i) exactly two will strike the target
(ii) at least two will strike the target



PART C

Answer any three:

(3x10=30)

Q.3) find the mean and standard deviation of binomial distribution?

Q.4) Evaluate $\int_0^6 \frac{dx}{1+x^2}$ by using (i) trapezoidal rule (ii) simpson's 1/3 rule (iii) simpson's 3/8 rule

Q.5) Using Picard methods to obtained the approximate solution of the ODE $\frac{dy}{dx} = x^2 + y^2$ for $x=0.4$
Given $y(0)=0$

Q.6) Find the real root of the equation $x^3 - x - 4 = 0$ using bisection method correct up to 3 decimal Places

Q.7) The values of x and y are given as below:

X: 5 6 9 11

Y: 12 13 14 16

Find the value of Y when $x=10$. Using Lagrange's interpolation formula.

Q.8) Solve the following system of equation by gaussian elimination method;

$$\begin{aligned}x + y + z &= 6 \\3x + 3y + 4z &= 20 \\2x + y + 3z &= 13\end{aligned}$$

iv. Which is *not* a characteristic of a process?

- a. collection of program that manages hardware resources
- b. work with user's resources in the application programs
- c. try to monitor the hardware and application programs
- d. all of the mentioned

v. Which one of the following is *not* true?

- a. kernel is the program that constitutes the central core of the operating system
- b. kernel is the first part of operating system to load into memory during booting
- c. kernel is made of various modules which cannot be loaded in running operating system
- d. kernel remains in the memory during the entire computer session

vi. Which of the following condition is required for deadlock to be possible?

- a. Mutual exclusion
- b. A process may hold allocated resources while awaiting assignment of other resources
- c. No resource can be forcibly removed from a process holding it
- d. All of the mentioned



ARKA JAIN University, Jharkhand

2nd Semester Final Examination – 2017-18

Subject: Operating System

Course: BCA
Full Marks: 40
Pass Marks: 16

Time: 2 Hours

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A,B & C**
- **Part-A** is compulsory.
- **Part- B** contains **SIX** questions out of which **THREE** questions are to be answered.
- **Part- C** contains **FOUR** questions out of which **TWO** questions are to be answered.

PART A

Q.1) All questions are compulsory

[A] Multiple Choice Questions:[1 mark each]:

[10x1=10 marks]

- Which from the following is not a valid state of a state transition process model?
 - Running
 - Ready
 - New
 - Kill
- Which of the following is not the approach to dealing with deadlock?
 - Prevention
 - Avoidance
 - Detection
 - Deletion
- What is operating system?
 - collection of programs that manages hardware resources
 - system service provider to the application programs
 - link to interface the hardware and application programs
 - all of the mentioned
- Which one of the following is not true?
 - kernel is the program that constitutes the central core of the operating system
 - kernel is the first part of operating system to load into memory during booting
 - kernel is made of various modules which cannot be loaded in running operating system
 - kernel remains in the memory during the entire computer session
- Which of the following condition is required for deadlock to be possible?
 - Mutual exclusion
 - A process may hold allocated resources while awaiting assignment of other resources
 - No resource can be forcibly removed from a process holding it
 - All of the mentioned

- vi. A system is in the safe state if:
- the system can allocate resources to each process in some order and still avoid a deadlock
 - there exist a safe sequence
 - both (a) and (b)
 - none of the mentioned
- vii. Which one of the following is the address generated by CPU?
- physical address
 - absolute address
 - logical address
 - none of the mentioned
- viii. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called:
- Fragmentation
 - Paging
 - Mapping
 - none of the mentioned
- ix. A process can be:
- single threaded
 - multithreaded
 - both (a) and (b)
 - none of the mentioned
- x. Which one of the following is not shared by threads?
- program counter
 - stack
 - both (a) and (b)
 - none of the mentioned

PART B

Q.2) Answer any Three question

[3 × 5 = 15 marks]

- Define the importance of CPU Schedulers. Describe the differences among the short term, medium term and long term schedulers.
- Describe all necessary conditions for deadlock to occur.
- Draw the state transition diagram of a process and label the various transitions of it. Explain the need of process suspension.
- Explain the first fit, worst fit and best fit techniques of fixed memory partition techniques with its advantage and disadvantage of each.
- What do you understand by thread? Explain the difference between process control block (PCB) and thread control block (TCB).

- vi. Write short notes on any two of the following
- IPC problems
 - MS-DOS file systems
 - Segmentation
 - History of operating system

PART C

Answer any 2 questions

[2 × 7.5 = 15 marks]

- Q.3) Consider the following set of processes, with the length of the CPU burst given in milliseconds.

| Process | Burst Time |
|---------|------------|
| P1 | 10 |
| P2 | 1 |
| P3 | 2 |
| P4 | 1 |
| P5 | 5 |

Assume that all the process have arrived at a same time in the order P3,P4,P5, P2, P1. Draw Gantt charts illustrates the execution of the processes using FCFS, SJF (non-preemptive) and round robin technique (with the time quantum =2 assume that smaller the number higher the priority). Make a performance comparison between average waiting time and average turnaround time of each technique. Assume negligible context switching time.

- Q.4) What do you understand by fragmentation? What are the different techniques to remove fragmentation in case of multi-programming with fixed partitions and variable partitions? Discuss.
- Q.5) What are the different file organizations? Discuss the different access mechanism of it.
- Q.6) What is IPC? Explain the importance of IPC in multiprogramming environment. What are the methods available to implement the IPC in system?



ARKA JAIN University, Jharkhand

2nd Semester End Semester Examination – 2017-18

BCA

Subject : Programming with C++ Practical ✓

Course: BSC(IT)

Full Marks : 30

Pass Marks: 12

Time : 2 Hour

- Answer any one question.
- Students are first to write the answers on their answer sheets and then go to the Computer lab to code the program.
- After coding, the print out of the program alongwith its output need to be attached with the answer sheet.
- Pen/Pencil/Eraser etc. are not allowed in the Computer Lab. Only Question Paper and Answer sheet is allowed inside the Computer Lab

Answer any One question

1. Create a class Distance with data members and member functions as follows:

```
class Distance
{
    private:
        int feet;
        float inches;
    public:
        void getdist();
        void showdist();
        void add_dist( Distance, Distance );
};
```

| | |
|--------------------------------|------------------------|
| getdist() | - get length from user |
| showdist() | - display distance |
| add_dist(Distance, Distance) | - Add the distance |

Write a program to three objects of class Distance and input distance in feet and inches and them using add_dist().

2. Design a class Exchange to accept a sentence and interchange the first alphabet with the last alphabet for each word in the sentence, with single letter word remaining unchanged. The words in the input are separated by a single blank space and terminated by a full stop.

Example: Input: It is a warm day.

Output: tI si a marw yad

Some of the data members and member functions are given below:

Class Name : Exchange

Data members

sent : stores the sentence

rev : to store the new sentence

size : stores the length of the sentence

Member functions

Exchange() : default constructor

void readsentence() : to accept the sentence

void exfirstlast() : extract each word and interchange the first and last alphabet of the word and form a new sentence.

void display() : display the original sentence along with the new changed sentence.

Specify the class Exchange giving details of the constructor, void readsentence(), void exfirstlast() and void display(). Define the main() function to create an object and call the functions accordingly to enable the task.

3. Write a C++ program to overload binary + operator to add two objects **X** and **Y** and store the output in a third object **Z**. The class has **int** data member as **n**. Example: **Z = X + Y**



ARKA JAIN University, Jharkhand

2nd Semester Internal Practical Examination – 2017-18

Practical

Subject : Operating System

BSc. IT

Course: BCA

Full Marks : 30

Time : 1.5 Hours

Candidates are required to give their answers in their own words as far as practicable.

Answer any five

1. Write uses of commands

- i. Pwd
- ii. Ls
- iii. Comm.
- iv. Cat
- v. Tr
- vi. Awk
- vii. Echo
- viii. Clear
- ix. Sort
- x. Head

2. Write code to display HELLO WORLD on screen

3. Write shell program to display days of a week using select case.

4. Write shell program to any number from 1 to 10 using select case

5. Write shell program to enter a string in lower case and display in upper case.

6. Write shell program to enter month, year and display it in relative calendar form.



ARKA JAIN University, Jharkhand

2nd Semester Internal Examination – 2017-18

Subject : Data Structure through C

Course: BCA / BSCIT
Full Marks : 20
Pass Marks: 08

Time : 1 Hour

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A & C** are compulsory.
- **Part- B** contains **FOUR** questions out of which **TWO** questions are to be answered.

PART A

Q1). Multiple Choice Questions / Very Short question (5x1=5)

- i). The elements are removal from a stack in order.
- a) Reverse
 - b) Hierarchical
 - c) Alternative
 - d) sequential
- ii). What is the time complexity to count the number of elements in the linked list?
- a) $O(1)$
 - b) $O(n)$
 - c) $O(\log n)$
 - d) None of the mentioned
- iii). Consider an implementation of unsorted singly linked list. Suppose it has its representation with a head pointer only. Given the representation, which of the following operation can be implemented in $O(1)$ time?
- I) Insertion at the front of the linked list
 - II) Insertion at the end of the linked list
 - III) Deletion of the front node of the linked list
 - IV) Deletion of the last node of the linked list
- a) I and II
 - b) I and III
 - c) I, II and III
 - d) I, II and IV
- iv). What would be the asymptotic time complexity to add an element in the linked list?
- a) $O(1)$
 - b) $O(n)$
 - c) $O(n^2)$
 - d) None

v) Consider the following definition in c programming language

```
struct node
{
int data;
struct node * next;
}
typedef struct node NODE;
NODE *ptr;
```

Which of the following c code is used to create new node?

- a) ptr=(struct node*)malloc(sizeof(struct node));
- b) ptr=(struct node*)malloc(struct node);
- c) ptr=(struct node*)malloc(sizeof(struct node*));
- d) ptr=(struct node)malloc(sizeof(node));

PART B

Answer any Two:

(2x5=10)

- Q2). A) Write an algorithm for insertion after a node in a single link list?
B) Write an algorithm for deletion before a node in a single link list?
- Q3). A) What is complexity? Write a linear search algorithm and compute its complexity?
B) State Asymptotic notation?
- Q4). A) Write an algorithm for push operation in stack (array implementation)?
B) Write an algorithm for dequeue in a queue(array implementation)?
- Q5). Write a menu driven program in C which implement stack using array with following options:
 - i)push()
 - ii)pop()
 - iii)display()

PART C

Q.6 Convert the following infix expression to postfix using stack? (1x5=5)

$A/B * C - D + (E / F + G \wedge H) * I$



Subject : Data Structure

Course: BCA/BSCIT

Time : 2 Hour

- Answer one question .
- Students are first to write the answers on their answer sheets and then go to the Computer lab to code the program.
- After coding, the print out of the program along with its output need to be attached with the answer sheet.
- Pen/Pencil/Eraser etc. are not allowed in the Computer Lab

Answer any One question

1. write a program to implement insertion and deletion of data in queue using array
2. write a menu driven program with following menu
 - a)creation
 - b)insertion at the end
 - c)display
- 3.write a program to implement push and pop operation in stack using array
- 4.write a menu driven program for single link list with following menu
 - a) create
 - b)insertion at the after a given node
 - c)display



ARKA JAIN University, Jharkhand

2nd Semester Final Examination – 2017-18

Subject :Data Structure Through C

Course: BCA

Full Marks : 70

Time : 3 Hours

Pass Marks: 28

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A,B& C**
- **Part-A** is compulsory.
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- **Part- C** contains **SIX** questions out of which **THREE** questions are to be answered.

PART A

Q.1) All questions are compulsory

A) Multiple Choice Questions :

(10x1=10)

- Stack is use for
 - CPU resource allocation
 - breadth first search traversal
 - recursion
 - none of the above
- The following formula is for
left($\leq K$) root (k) right($>k$)
 - Binary tree
 - stack
 - link list
 - binary search tree
- is very useful in situation when data have to stored and then retrieved in reverse order.
 - Stack
 - Queue
 - List
 - Link list
- Which of the following data structure is non linear type?
 - Strings
 - Lists
 - Stacks
 - Graph
- Match the following.

| | |
|---------------------|---|
| a) Completeness | i) How long does it take to find a solution |
| b) Time Complexity | ii) How much memory need to perform the search. |
| c) Space Complexity | iii) Is the strategy guaranteed to find the solution when there in one. |

 - a-iii, b-ii, c-i
 - a-i, b-ii, c-iii
 - a-iii, b-i, c-ii
 - a-i, b-iii, c-ii

f) State True or False.

a) Binary search is used for searching in a sorted array.

b) The time complexity of binary search is $O(\log n)$.

- i) True, False
- ii) False, True
- iii) False, False
- iv) True, True

g) Which of the following data structure store the homogeneous data elements?

- v) Arrays
- vi) Records
- vii) Pointers
- viii) Lists

h) A data structure where elements can be added or removed at either end but not in the middle is called ...

- i) linked lists
- ii) stacks
- iii) queues
- iv) dequeue

i) Binary tree with all the leaf node at the same level

- i) strictly binary tree
- ii) complete binary tree
- iii) binary search tree
- iv) none of the above

j) A node with both left and right child address as NULL

- i) parent node
- ii) child node
- iii) root node
- iv) siblings

B] Very Short question

(5x2=10)

- a) What is linear search and binary search method?
- b) What is dynamic memory allocation?
- c) What is complete binary tree?
- d) What is circular link list?
- e) What is the difference between stack and queue?

PART B

Q2. Answer any four:

(4x5=20)

- i) What is queue? mention its underflow and overflow condition with example?
- ii) Define binary search tree give an example?
- iii) What are non-primitive data types explain in detail?
- iv) State and explain insertion sort with an example?
- v) What is a doubly linked list? explain in detail?
- vi) Write a program in C for deletion of an element in a 1-D array?

PART C

Answer any three:

(3x10=30)

- Q.3) a) Write an algorithm for deletion in a doubly linked list.
b) Write an algorithm for creation of a single linked list.

Q.4) Write a program in C for insertion and deletion in a stack?

Q.5) What is a linear and non-linear data structure? state the difference between linear and non-linear data structure?

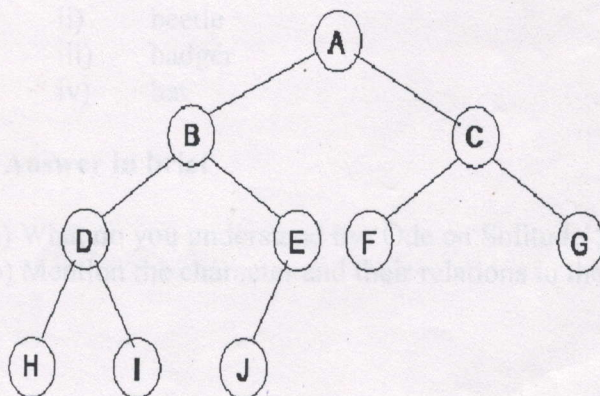
Q.6) Convert the following expression into postfix
 $a*b-c/d+(e^g+h-i)^j/k^f-(v+s)*q$

Q.7) Sort the given array using bubble sort technique:-

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 82 | 62 | 93 | 54 | 85 | 47 | 52 | 53 | 13 | 80 |
|----|----|----|----|----|----|----|----|----|----|

Q.8) a) What is tree data structure? state what is child node, leaf node and height of a binary tree?

b) Traverse the following binary tree using inorder traversal:-





ARKA JAIN University, Jharkhand

2nd Semester Final Examination – 2017-18

Subject : ENGLISH

Course: BCA

Full Marks : 35

Pass Marks: 14

Time : 2 Hours

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A,B& C**
- **Part-A** is compulsory.
- **Part- B** contains **FIVE** questions out of which **THREE** questions are to be answered.
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PART A

Q.1) All questions are compulsory

A) Multiple Choice Questions :

(4x1=4)

a) The soldiers are not sure where _____ going.

- i) They
- ii) Their
- iii) They're

b) He killed the bird _____ a stone.

- i) from
- ii) with
- iii) through
- iv) out

c) It hasn't rained for months – the ground's as dry as a _____.

- i) sand
- ii) desert
- iii) pond
- iv) road

d) I can't see a thing without my glasses. I'm as blind as a

- i) bee
- ii) beetle
- iii) badger
- iv) bat

B) Answer in brief

(2x2=4)

- a) What do you understand by 'Ode on Solitude'?
- b) Mention the character and their relations in the drama The Dear Departed.

PART B

(3x5=15)

Q2. Answer any Three:

- i) What is the main idea of Sonnet 116? Explain.
- ii) Why does the poet describe the stones as "cold" and "gray"?
- iii) *And the stately ships go on To their haven under the hill; But O for the touch of a vanish'd hand, And the sound of a voice that is still! Break, break, break, At the foot of thy crags, O Sea! But the tender grace of a day that is dead, Will never come back to me.* Explain.
- iv) Why the poet does wishes to return to his state before life on earth in the poem The Retreat?
- v) Correct the following sentences.

- a. I have visited Niagara Falls last weekend.
- b. The woman which works here is from Japan.
- c. She's married with a dentist.
- d. She was boring in the class.
- e. I must to call him immediately.
- f. Every students like the teacher.
- g. Although it was raining, but we had the picnic.
- h. I enjoyed from the movie.
- i. I look forward to meet you.
- j. I like very much ice cream.

PART C

Answer any two:

(2x6=12)

Q.3) Sonnet 116 sets out to define true love by firstly telling the reader what love is not. Explain the theme of the sonnet.

Q.4) In the poem Break Break Break, why is the poem set at the seaside? Why is the sea a useful symbol? Does the sea comfort the speaker?

Q.5) What message has been stated by the poet in his poem, The Retreat. Support your answer with examples from the poem.

Q.6) Read the given passage and answer the following questions.

"While there I fell ill with influenza, and all day long I had nothing to do but read or think, and it was then that the face began to get a firmer hold of me. It grew more and more real and remarkable. I may say that it filled my thoughts day and night. There was a curious curve of the nose and the forehead was remarkable, in fact the face of an uncommon man, a man in a thousand."

"Well, I got better, but the face still controlled me, found myself searching the streets for one like it. Somewhere, I was convinced, the real man must exist, and him I must meet. Why, I had no idea; I only knew that he and I were in some way linked by fate. I often went to places where people gather in large numbers - political meetings, football matches, railway stations. But all in vain. I had never before realized as I then did how many different faces of man there are and how few. For all faces differ, and yet they can be grouped into few types."

"The search became a madness with me. I neglected everything else. I stood at busy corners watching the crowd until people thought me mad, and the police began to know me and be suspicious. I never looked at women; men, men, men, all the time."

He passed his hand over his brow as if he was very tired. "And then," he continued. "I at last saw him. He was in a taxi driving east along Piccadilly. I turned and ran beside it for a little way and then saw an empty one coming. 'Follow that taxi,' I said and leaped in. The driver managed to keep it in sight and it took us to Charing Cross. I rushed on to the platform and found my man with two ladies and a little girl. They were going to France. I stayed there trying to get a word with him, but in vain. Other friends had joined the party and they moved to the train in one group."

I hastily purchased a ticket to Folkstone, hoping that I should catch him on the boat before it sailed; but at Folkstone he got on the ship before me with his friends, and they disappeared into a large private cabin. Evidently he was a rich man."

"Again I was defeated; but I determined to go with him, feeling certain that when the voyage had begun he would leave the ladies and come out for a walk on the deck. I had only just enough for a single fare to Boulogne but nothing could stop me now. I took up my position opposite his cabin door and waited. After half an hour the door opened and he came out, but with the little girl. My heart beat fast. There was no mistaking the face, every line was the same. He looked at me and moved towards the way to the upper deck. It was now or never, I felt."

"Excuse me," I stammered, "but do you mind giving me your card? I have a very important reason in asking it."

"He seemed to be greatly surprised, as indeed well he might; but he granted my request. Slowly he took out his case and handed me his card and hurried on with the little girl. It was clear that he thought me mad and thought it wiser to please me than not."

"Holding the card tight in my hand I hurried to a lonely corner of the ship and read it. My eyes grew dim; my head reeled; for on it were the words; Mr. Ormond Wall, with an address at Pittsburgh, U.S.A. I remember no more until I found myself in a hospital at Boulogne. There I lay in a broken condition for some weeks, and only a month ago did I return."

He was silent.

We looked at him and at one another and waited. All the other talk of the evening was nothing compared with the story of the little pale man.

"I went back," he started once again after a moment or so, "to Great Ormond Street and set to work to find out all I could about this American. I wrote to Pittsburgh; I wrote to American editors; I made friends with Americans in London: but all that I could find out was that he was a millionaire with English parents who had resided in London. But where? To that question I received no answer."

"And so the time went on until yesterday morning, I had gone to bed more than usually tired and slept till late. When I woke, the room was bright with sunlight. As I always do, I looked at once at the wall on which the face is to be seen. I rubbed my eyes and sprang up. It was only faintly visible. Last night it had been clear as ever - almost I could hear it speak. And now it was a ghost of itself."

"I got up confused and sad and went out. The early editions of the papers were already out. I saw the headline, 'American Millionaire's Motor Accident.' You all must have seen it. I bought it and read. Mr. Ormond Wall, the Pittsburgh millionaire, and party, motoring in Italy, were hit by a wagon and the car overturned. Mr. Wall's condition was critical."

- What happens at the Dabney's party?
- Describe the man who's narrating the story and how would made a difference to his story?
- State the madness of the narrator in your own words.
- Story telling is an art, how and has the narrator done justice to such an art in the given passage?
- Give the meanings and make sentences with the words.
Influenza, millionaire, stammered, vain, compared



ARKA JAIN University, Jharkhand

2nd Semester Examination – 2017-18

Subject : Programming in C++

Course: BCA

Full Marks : 40

Time : 2 Hours

Pass Marks: 16

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
- **Part- B** contains **SIX** questions out of which **THREE** questions are to be answered.
- **Part- C** contains **FIVE** questions out of which **TWO** questions are to be answered.

PART A

Q.1) Answer all the questions (Multiple Choice Questions)

(10x1=10)

a) What following operator is called ?:

- (i) Scope Resolution Operator
- (ii) Conditional Operator
- (iii) Ternary Operator
- (iv) if else o/p

b) Which operator cannot be overloaded?

- (i) +
- (ii) -
- (iii) *
- (iv) ::

c) Only functions of the class can access the data of the class and they (functions) provides the interface between data, objects and the program. This kind isolation of the data from direct access by the program is called _____.

- (i) Data Abstraction
- (ii) Data Hiding
- (iii) Data Binding
- (iv) Data Encapsulation

d) A Constructor that does not have any parameters is called _____ Constructor.

- (i) Custom
- (ii) Dynamic
- (iii) Static
- (iv) Default

e) When a base class is privately inherited by the derived class, then _____.

- (i) protected members of the base class become private members of derived class
- (ii) public members of the base class become private members of derived class
- (iii) both a and b
- (iv) only b

f) What is the difference between protected and private access specifiers in inheritance?

- (i) private member is not inheritable and not accessible in derived class.
- (ii) protected member is inheritable and also accessible in derived class.
- (iii) Both are inheritable but private is accessible in the derived class.
- (iv) Both are inheritable but protected is not accessible in the derived class.

- g) Default values for a function are specified when ____ .
- (i) function is defined
 - (ii) function is declared
 - (iii) Both a and b
 - (iv) None of these

- h) When overloading unary operators using Friend function, it requires ____ argument/s.
- (i) Zero
 - (ii) One
 - (iii) Two
 - (iv) None of these.

- i) Assigning one or more function body to the same name is called _____ .
- (i) Function Overriding
 - (ii) Function Overloading
 - (iii) Both a and b
 - (iv) None of the above

- j) When a child class inherits traits from more than one parent class, this type of inheritance is called _____ inheritance.
- (i) Hierarchical
 - (ii) Hybrid
 - (iii) Multilevel
 - (iv) Multiple

PART B

(3x5=15)

Q2. Answer any three:

- i) Define constructor. Explain the various types of constructors with examples.
- ii) What is a friend function? Explain the need for using a friend function.
- iii) What is a static data member? How they are used in static function? Explain with example.
- iv) Explain various access specifiers used in C++.
- v) What are different forms of inheritance supported by C++? Explain them with suitable example
- vi) State the important features of object oriented programming

PART C

(2x7.5=15)

Answer any two:

Q.3) Design three classes student, test and result, where result is inherited from test and test is inherited from student. Write functions in C++ to initialize the values. Also write a main function for running the created objects.

Q.4) Write a C++ program to calculate the volume of cube, cuboid and cylinder using function overloading.

Q.5) Write a C++ program to overload binary * operator to find the product of two objects A and B and store the output in a third object C. The class has an int data member as x. Example: C = A * B

Q.6) Write a C++ Program for reading the Content in the File and perform any manipulation to the content.

Q.7) Write the definition for a class called **time** that has hours and minutes as integer. The class has the following member functions:

void gettime(void) to input the value of hour and minutes in the specified object

void showtime() to display time object

time sum(time) to sum two time object & return time

a) Write the definitions for each of the above member functions.

b) Write main function to create three time objects. Input the value of hour and minute in two objects and call sum() function to calculate sum and assign it in third object. Display all time objects.

PART A

Q.1) All questions are compulsory.

A) Multiple Choice Questions :

(4x1=4)

a) Burrough Corporation was associated with

- i) TCS
- ii) HCL
- iii) MindTree
- iv) Wipro

b) R.C. Kohli is considered as

- i) Father of computer
- ii) Father of Indian IT Industry
- iii) Father of Atomic Research
- iv) None of above

c) Before establishment of Mind Tree their founder members of were working in

- i) Wipro
- ii) TCS
- iii) Tech Mahindra
- iv) None of Above

d) Shry Nadar belong to

- i) Oracle
- ii) Mphasis
- iii) HCL
- iv) None of above

B) Very Short question

a) What do you mean by IT out sourcing?

(2x2=4)

b) What is BPO?



ARKA JAIN University, Jharkhand

2nd Semester Final Examination - 2017-18

Subject: IT Awareness-II

Course: BCA

Full Marks : 35

Pass Marks: 14

Time: 2 Hours

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- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
- **Part- B** contains **FIVE** questions out of which **THREE** questions are to be answered.
- **Part- C** contains **FOUR** questions out of which **TWO** questions are to be answered.

PART A

Q.1) All questions are compulsory

A] Multiple Choice Questions :

(4x1=4)

- Burrough Corporation was associated with
 - TCS
 - HCL
 - MindTree
 - Wipro
- F.C.Kohli is considered as
 - Father of computer
 - Father of Indian IT Industry
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 - None of above
- Before establishment of Mind Tree their founder members of were working in
 - Wipro
 - TCS
 - Tech Mahindra
 - None of Above
- Shiv Nadar belong to
 - Oracle
 - Mphasis
 - HCL
 - None of above

B] Very Short question

(2x2=4)

- What do you mean by IT out sourcing?
- What is BPO?

PART B

(3x5=15)

Q2. Answer any three:

- i) Discuss the present situation of Indian IT Industry?
- ii) What is the Role of IT Consultant?
- iii) What is the history behind the establishment of TCS?
- iv) What is Software Testing?
- v) What are the skill required for a software analyst ?

PART C

(2x6=12)

Answer any Two:

Q.3) Discuss the different phases of development of IT Industry in India?

Q.4) Explain the History, working area and opportunity in Wipro?

Q.5) Explain the functioning of Mind Tree.

Q.6) What was the role of TCS in the development of Indian IT industry?