

Roll. No.

Code No. 12/NLCS/English/103

## Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 100

General Instruction :-

SECTION – A READING	30
SECTION – B WRITING	30
SECTION – C LITERATURE & LONG READING TEXT	40

- (i) The paper is divided into three Section – A, B and C. All the sections are compulsory.
- (ii) Separate instructions are given with each section and questions, wherever necessary. Read these instructions carefully and following them faithfully.
- (iii) Do not exceed the prescribed word limit while answering the questions. Marks will be deducted if this limit is crossed.
- (iv) Please write down the serial number of the question in the answer script before attempting it.

### SECTION – A (Reading Unseen Passages And Note-Making)

Q.1 Read the following passage carefully :

1. The Titanic, in its watery grave, is a great museum of human history and is at risk of being lost forever because of curious voyagers and treasure hunters, fears Bob Ballard, who first discovered the remains of the iconic ship in 1985. Famous for discovering the great ship, Ballard is a former US Navy officer and a professor of oceanography.
2. “Titanic is a museum of human history without door and guard. I am deeply concerned about not only the Titanic but all the ancient history that is now at risk. If we cannot save this iconic ship, then there is very little hope we can save ancient ships. The world should realize that you don’t have to go down and take everything and you do not have to do a treasure hunt. This is a common heritage of all of us and if we really want to take steps to preserve human history in the ocean, we need to start with Titanic”, Ballard said in a telephonic interview from London.
3. Ballard, as part of a tie-up, is presenting a documentary called “ Save the Titanic” on the 100<sup>th</sup> anniversary of the sinking of the great ship – April 15, 1912. The ship and her fate continue to fascinate, largely because of the horror that took place that night, with 1,522 passengers and crew losing their lives.
4. Ballard says that despite being on the ocean floor for 100 years, the ship is full of human footprints. “You will find pairs of shoes everywhere. The sea and the life below has claimed everything but they do not know what to do with shoes so you will find a pair of mother’s shoes next to her little daughter and that’s their gravestone. At her wreckage, we almost felt that we were surrounded by the lifeboats of all the people that were in the water at that spot.”
5. Ballard says that the fate of Titanic continues to fascinate so many years after it sank because it is “Irony personified in history”. “The story has all the ingredients to make it timelessly fascinating. You have this revolutionary ship that’s unsinkable, and carrying a cross section of people in society. And then, it goes and hits an iceberg and sinks on its maiden journey. It’s an irony personified in history”.
6. Talking about his discovery, which came after great research and 75 years later, Ballard says it was a sombre moment when they first spotted the boiler of the Titanic. “In the 90s, advanced technology gave us double diving capabilities in the Atlantic Ocean. I knew that the Titanic was sitting at almost 12,000 feet. What led me to her discovery was a simple technique that I followed. We decided to look for the debris trail instead of the ship”.
7. Ballard says the ship, if preserved well and not subjected to constant submarine journeys, will last for a longtime on the Atlantic floor. “The deep sea, because of its darkness, its cold temperatures and its great pressures, creates a high state of preservation. With a little caution, we can protect the Titanic for future generations to visit”.

8. Ballard has also connected to the people of Belfast, who refused to talk about the tragedy. "The ship's construction took place at Belfast. After the tragedy, families of the workers refused to talk about it because of the shame and sadness in the loss of life involved."

Q.1.1 On the basis of your reading of the passage, answer the following questions by choosing the best of the given choice. 3

(i) The Titanic sank on ----- .

- (a) its 100<sup>th</sup> anniversary (b) 15 April 1912  
(c) an iconic voyage in 1985 (d) leaving the port of Belfast

(ii) The Titanic continues to attract attention because ----- .

- (a) it is irony personified in history (b) its advanced technology gave double diving technologies  
(c) it is a treasure hunt (d) it is a common need

(iii) Ballard's documentary on the Titanic is titled ----- .

- (a) A museum of human history (b) The Titanic  
(c) Save the Titanic (d) 75 yearslater

Q.1.2 Answer the following questions briefly :-

**5 × 1 = 5**

- (i) What happened on April 15, 1912?  
(ii) Who is Bob Ballard and what did he discover?  
(iii) Why does Bob Ballard call it a 'museum of human history'?  
(iv) Why did the people of Belfast refuse to talk about Titanic?  
(v) What did Ballard do as part of the 100<sup>th</sup> anniversary of the sinking of the Titanic?

Q.1.3 Find words from the passage which mean the same as:-

**3**

- (a) first of its kind (para5) (b) very solemn or serious (para – 6)  
(c) scattered pieces of rubbish (para - 6)

Q.2 Read the passage given below and answer the questions that follow :

**8**

The kingdom of books is as vast as the universe, for there is no corner of it which they have left unexplored. There is no dearth of books on any topic, be it as simple as the composition of sodium nitrate or as intricate as the mechanism of a spacecraft towards Mars. We make use of books for the dissemination of useful ideas, for popularizing the fruits of our research in various fields of knowledge, and for spreading our progressive views on matters which are of vital concern to our fellow beings. In fact, no single product of human labour has been as helpful to the advancement of civilisation as books which are written in all languages of the world and which are decoratively placed in bookshelves in our homes and tastefully displayed in bookstalls and libraries. If to Keats, works of ancient poets like Homer were realms of gold from which he derived much joy as well as inspiration, to the modern lover of books, the labours of all geniuses, including those of Keats, are mines of inestimable intellectual wealth which he goes on exploring for the sake of his mental and spiritual advancement.

There was a time some five centuries back when books, as we know them today, did not exist, and when there were few people who could read things written on stuff that certainly was not paper. At that time our ancestors used rocks, pillars and parchment with a view to recording and perpetuating their most important thoughts and achievements in the language they then understand. Now-a-days, the book-producing machinery gives to the work of every great scientific thinker, poet or philosopher, the character of permanence, reproduces in attractive forms old and rare manuscripts and caters to the differing tastes of millions of people for whom book-reading is an extremely pleasant, intellectual exercise. Moreover, the high percentage of literacy, the growth of libraries in towns and villages and the tendency of intellectuals to have their own private collection of useful books, have given birth to a number of big publishing houses with branches in many parts of the world and publications numbering thousands. In recent years paperbacks have begun to reveal their attraction for the reading public, and although they have not

completely thrown into neglect the hard cover market, they have appeared to people who would not have thought of buying books not so very long ago. These paperback are generally reprints of popular fiction or of established classics or translation from foreign works which are in constant demand at all bookstalls.

Q.2.1 On the basis of your reading of above passage make notes on it in points only up, using abbreviation wherever necessary, Supply a suitable title. **5**

Q.2.2 Make a summary of the above in 80 words. **3**

Q.3 Read the passage carefully :

“You are invited to take part in MOB, the project that creates an inexplicable mob of people in New York City for ten minutes or less. Please forward this mail to other people you know who might like to join”.

The email was sent out to gather the first known, orchestrated and successful flash mob on June 17, 2003, at a Macy’s departmental store in Manhattan, New York City. The mob gathered at four different bars, and ten minutes before the event was to occur, small pieces of paper were handed out stating the final destination. The participants descended quickly upon Macy’s home furnishing department. From 7:27 p.m.to 7:37 p.m., 200 hundred people surrounded a \$10,000 rug, and, as instructed, the “mobsters” informed the bewildered salesperson, that they all lived together in a Long Island City communc and they were looking to purchase a “love rug”. For 10 minutes the “Mobsters” discussed the rug among themselves and then quickly dispersed.

A flash mob defined by Merriam-Webster’s dictionary, is “a group of people summoned (by email or text message) to designated location at a specified time to perform an indicated action before dispersing”. What started as an email inviting people to join an “Inexplicable mob” has turned into a global fad that continues to grow, spread and amaze bystanders everywhere.

Flash mob performances have included an impromptu pillow fight in North Carolina, silent group dance routines in London’s underground metro, and a huge snowball fight in Washington D.C.

First flash mob in the country was in October, 2003 when about sixty people entered a Mumbai mall and began shouting like stock brokers and gesticulating agitatedly”. Before the stupefied guards could react we broke into an impromptu garba dance, clapping our hands and whooping. At a shouted signal, we froze dead in our tracks, holding the pose for exactly half a minute as related by a participant. The group then opened the umbrellas they had been asked to bring along and melted into the crowd. The flash mob was originally created as a social experiment in the study of “scensterism” derived from “scenster”. According to Wikipedia, the terms “scenster” is often used to describe types of young, recently settled, urban middle class adults and older teenagers with interests in non-mainstream fashion and culture.

Wasik said in an interview “original idea was to create an email that would get forwarded around in some funny way, or that would get people to come to a show that would turn out to be some thing different or surprising. I eventually came up with this lazy idea, which was that the thing would just have one simple, in your face aspect to it, there wouldn’t be any show and that the email would be up front in that it was inviting people to do basically nothing at all”.

The idea became that the people themselves would become the show and that just by responding to this random email, they would, in a sense, create something.

Q.3.1 Answer the following Question briefly:- **5**

- (i) To what kind of show were the people invited through a random email?
- (ii) What happened in October, 2003?
- (iii) How has Merriam defined a flash mob?
- (iv) What did North Carolina, London, Washington DC witness?
- (v) What did the ten minute ‘show’ at Macy’s New York do?

- Q.3.2 Answer following Question's by choosing the most appropriate option from the given ones : 3
- (i) One random e-mail can----- .  
(a) collect people for a specific time (b) collect people for specific purpose  
(c) Both (a) and (b) (d) All of the above
- (ii) The flash mob came into existence as a ----- .  
(a) Political weapon (b) social experiment (c) economic tool (d) None of above
- (iii) Scenester's describes -----.  
(a) young people (b) urban middle class adults (c) older teenagers (d) all of above

- Q.3.3 Which words in the passage mean the same as the following : 3
- (i) enormous (para-4)  
(ii) something which can't be explained (para-3)  
(iii) surprised (para-2)

### SECTION – B ( WRITING )

- Q.4 Draft a poster on the theme of Prevention against Malaria. Do not exceed 50 words. 4

**OR**

Sumesh / Suman has cleared the Pre-Medical Pre-Dental Entrance Examination. The family is elated at the achievement and they decide to have a get together for all friends. Draft a formal Invitation for the get-together.

- Q.5 You are Mr. M.L.Sareen. You have seen an advertisement in the Hindustan Times for the post of marketing manager. Write an Application with complete bio-data. 6

**OR**

Write a letter to the Editor of a newspaper criticizing the school going students' habit of aping the western culture thoughtlessly. You are Raj/Rajni living at 1407, Sector 47, Faridabad.

- Q.6 Terrorism and Antisocial activities have become the part of the modern world. Education has failed to develop the character of pupils. Write an article on the topic Character : The Index of Progress. Do not exceed 200 words. 10

**OR**

You are Raman/Ruchika. Write an article in 150-200 words for your school magazine on the topic. **“Life without Modern Gadgets”**.

- Q.7 As compared to the older generation the youth of today are greatly inclined to pursue adventures activities either for money or for fun. There is a latest craze for joining reality shows, rafting etc. Write an article in 150-200 words on what kind of life you would prefer – safe or adventurous.  
**“Adventurous life versus Safe life”**. 10

**OR**

You think differently from the way your parents think about food, clothing and life style. Write an article on **“Generation Gap – A Myth or Reality”** in 150-200 words.

## SECTION – C LITERATURE

- Q.8 Read the extract and answer the questions :- 4
- The stunted, unlucky heir  
of twisted bones, reciting a father's gnarled disease,  
His lesson, from his desk. At back, of the dimclass.  
one unnoted, sweet and young. His eyes lives in dream,  
of squirrel's games, in tree room, other than this.
- (i) Who is the 'unlucky heir' and what has he inherited?  
(ii) What is the stunted boy reciting?  
(iii) Who is sitting at the back of dim class?  
(iv) Why is the heir unnoted and why are his dreams confined to squirrel's game?
- Q.9 Answer the following Question in 30-40 words (**Any Four**) :- 3×4=12
- (i) When Douglas realized that he was sinking, how did he plan to save himself?  
(ii) How did the crofter treat the man with the rattrap? What does it indicate about him?  
(iii) Write a short character sketch of Mr. Lamb?  
(iv) What will counting up to 12 and keeping still help us achieve?  
(v) What is the moral issue that the story raises?[should.....]
- Q.10 Give an account of Gandhiji's efforts to secure justice for the poor indigo sharecroppers of Champaran. (100 words) 6
- Q.11 In view of the theme of the lesson "The Enemy", which according to you, is higher – humanity or patriotism? (100 words) 6
- Q.12 Why did the Invisible man wish Marvel to do for him? How did he bring around Marvel to comply with his demands? What traits of char actor are reflected through this incidents? 6
- Q.13 Describe the circumstances that led the stranger to unveil himself. 6

\*\*ALL THE BEST \*\*

Roll. No.

Code No. 12/NLCS/Mathematics/41

# Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 100

General Instruction :- The Questions paper divided into 3 Sections A, B & C.

Section – A Question No. 1 to 6 carry **One Mark** each.

Section – B Question No. 7 to 19 carry **Four Marks** each.

Section – C Question No. 20 to 26 carry **Six Marks** each.

## Section – A

Q.1 Solve the equation  $\operatorname{cosec}^{-1}\left(\frac{x}{8}\right) + \operatorname{cosec}^{-1}\left(\frac{x}{15}\right) = \frac{\pi}{2}$ .

Q.2 Find the value of  $\Delta$ , if  $\Delta = \begin{vmatrix} 0 & b-a & c-a \\ a-b & 0 & c-b \\ a-c & b-c & 0 \end{vmatrix}$ .

Q.3 If  $y = \left[ \log \left\{ \log \left( \log x^5 \right) \right\} \right]$  find  $\frac{dy}{dx} = ?$

Q.4 If the radius of a circle increases from 5cm. to 5.1cm. Find the increase in area.

Q.5 Write the anti-derivative of  $\left( 3\sqrt{x} + \frac{1}{\sqrt{x}} \right)$ .

Q.6 Determine the order and degree of the differential equation  $\rightarrow y = Px + \sqrt{a^2P^2 + b^2}$ , where  $P = \frac{dy}{dx}$ .

## Section – B

Q.7  $\left\{ x \cos \left( \frac{y}{x} \right) + y \sin \left( \frac{y}{x} \right) \right\} y dx = \left\{ y \sin \left( \frac{y}{x} \right) - x \cos \left( \frac{y}{x} \right) \right\} x dy$ . **OR** Find  $\int \left[ \sqrt{\cot x} + \sqrt{\tan x} \right] dx$ .

Q.8 Prove that  $\rightarrow 2 \tan^{-1} \left[ \tan \frac{\alpha}{2} \tan \left( \frac{\pi}{4} - \frac{\beta}{2} \right) \right] = \tan^{-1} \left( \frac{\sin \alpha \cos \beta}{\sin \beta + \cos \alpha} \right)$ .

Q.9 Prove that  $\rightarrow 0 < a < b < c$ ,  $\cot^{-1} \left( \frac{1+ab}{a-b} \right) + \cot^{-1} \left( \frac{1+bc}{b-c} \right) + \cot^{-1} \left( \frac{1+ca}{c-a} \right) = 2\pi$ .

**OR**

Solve for equation  $3 \tan^{-1} \left( \frac{1}{2+\sqrt{3}} \right) - \tan^{-1} \left( \frac{1}{x} \right) = \tan^{-1} \left( \frac{1}{3} \right)$ .

Q.10 If  $A = \begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$  find  $x$  &  $y$  such that  $(xI + yA)^2 = A$ .

Q.11 Evaluate  $\rightarrow \begin{vmatrix} \sqrt{23} + \sqrt{3} & \sqrt{5} & \sqrt{5} \\ \sqrt{15} + \sqrt{46} & 5 & \sqrt{10} \\ 3 + \sqrt{115} & \sqrt{15} & 5 \end{vmatrix}$ .

Q.12 Express the following matrix as the sum of a symmetric and skew symmetric matrix and verify your result :

$$\begin{bmatrix} 3 & -2 & -4 \\ 3 & -2 & -5 \\ -1 & 1 & 2 \end{bmatrix}$$

Q.13 If  $a \neq p, b \neq q, c \neq r$  and  $\begin{vmatrix} p & b & c \\ a & q & c \\ a & b & r \end{vmatrix} = 0$ . Then find the value of  $\frac{p}{p-a} + \frac{q}{q-b} + \frac{r}{r-c} = ?$

Q.14 If  $f(x)$  defined by the following is continuous at  $x = 0$ , then find the values of  $a, b$  &  $c$ .

$$f(x) = \begin{cases} \frac{\sin(a+1)x + \sin x}{x} & ; x < 0 \\ c & ; x = 0. \\ \frac{\sqrt{x+bx^2} - \sqrt{x}}{bx^{3/2}} & ; x > 0 \end{cases}$$

Q.15 Find the intervals in which the function  $f(x) = (x+1)^3(x-3)^3$  strictly increasing or decreasing.

**OR**

Find the equation of the normal's to the curve  $y = x^3 + 2x + 6$  which are parallel to the line  $x + 14y + 4 = 0$ .

Q.16 Evaluate :  $\int \frac{\sin^6 x + \cos^6 x}{\sin^2 x \cos^2 x} dx$ . **OR** Simplify the integral :  $\int \frac{\sin x + \cos x}{\sqrt{9 + 16 \sin 2x}} dx$ .

Q.17 Evaluate :  $\int_0^{\pi/4} \log(1 + \tan x) dx$ .

Q.18 Using integration, find the area of region bounded by the triangle whose vertices are (1,0), (2,2), and (3,1).

Q.19 Solve the differential equation  $\rightarrow 3e^x \tan y dx + (1 - e^x) \sec^2 y dy = 0$ .

**Section – C**

Q.20 A wire of length 36cm. is cut into two pieces out of the pieces, one is turned in the form of a square and the other in the form of an equilateral triangle Find the length of each piece so that the sum of the areas of two be minimum.

**OR**

An open box with a square base is to be made out of a given quantity of metal sheet of area  $c^2$ . Show that the maximum volume of the box is  $\frac{c^3}{6\sqrt{3}}$ .

Q.21 Find  $\int_0^{\pi} \log(1 + \cos x) dx$ . **OR** Find  $\int \frac{(\sin^8 x - \cos^8 x) dx}{1 - 2\sin^2 x \cos^2 x}$ .

Q.22  $y = \frac{(\sqrt{x} + 1)(x^2 - \sqrt{x})}{x\sqrt{x} + x + \sqrt{x}} + \frac{1}{15}(3\cos^2 x - 5)\cos^3 x$ . Show that  $\frac{dy}{dx} = 1 + \sin^3 x \cos^2 x$ .

**OR**

If  $(x-a)^2 + (y-b)^2 = c^2$  for some  $C > 0$ , prove that  $\frac{\left\{1 + \left(\frac{dy}{dx}\right)^2\right\}^{3/2}}{\frac{d^2y}{dx^2}}$  is constant, independent of  $a$  &  $b$ .

**Q.23 Two School P and Q want to award their selected students on the values of discipline, politeness and punctuality. The school P wants to award ₹ x each, ₹ y each and ₹ z each for the three respectively values to its 3, 2 and 1 students with a total award money of ₹ 1000. School Q wants to spend ₹ 1500 to award its 4, 1 and 3 students on the respective values (By giving the same award money for the three values as before). If the total amount of awards for one prize on each value is ₹ 600, using matrices, find the award money for each value. Apart from the above three values, suggest one more value for awards.**

Q.24 Evaluate :  $\int_0^{\pi} \frac{xdx}{a^2 \cos^2 x + b^2 \sin^2 x}$ .

Q.25 Sketch the region common to the circle  $x^2 + y^2 = 16$  and the parabola  $x^2 = 6y$ . Also find the area of the region using integration.

Q.26 Solve the differential equation  $\rightarrow \sqrt{1+x^2+y^2+x^2y^2} + xy \frac{dy}{dx} = 0$ .

**Quarterly Examination 2015 – 16****Time: 3:00 Hrs.****M. M. 70**

- Q.1 (a) What is the difference between local variable and Global variable? Also give a suitable C++ code to illustrate both. 2
- (b) What are the access specifiers in a class. Explain with example. 3
- (c) Write the names of the header files, which is / are essentially required to run / execute the following C++ code. 1

```

void main ( )
{
    char C, string [ ] = "Excellence overload"
    for ( int I=0, string [I] != '\0'; I++)
    If ( string [ I ] = = ' ' )
    cout <<endl;
    else
    {
        C=toupper (string [ I ] );
        cout<<C;
    }
}

```

- (d) Rewrite the following program after removing the syntactical errors ( if any ). Underline each correction. 2

```

Include [ iostream.h]
Type def char (80);
Void main ( )
{
    Text T = "Indian";
    Int cout = strlen (S);
    Cout <<S<<'has'<<count <<'characters'
    <<endl;
}

```

- (e) Find the output of the following program : 2

```

# include < iostream. h>
void changeArray(int Number, int ARR[ ], int size)
{
    for (int L=0; L< size ; L++)
    If (L< Number)
    ARR [ L] +=L;
    else
    ARR [L]*=L;
}

void show (int ARR[ ], int size)
{
    for ( int L=0; L<size;L++)
    ( L%2! = 0)? cout << ARR [L]<< "# " :
    cout << ARR [ L ] << endl;
}

void main ( )
{
    int Array [ ] = { 30,20,40, 10, 60, 50};
    ChangeArray ( 3, Array, 6);
    Show (Array, 6 );
}

```

- (f) Go through the C++ code shown below, and find out the possible output or outputs form the suggested. Output option (i) to (iv). Also write the least value and highest value, which can be assigned to the variable guess. 2

```
# include < iostream -h>
# include < stdlib-h>
void main ( )
{
    randomize ( );
    int Guess, High =4;
    Guess = random (High) +50;
    for (int C = Guess ; C <= 55: C++)
    cout << C <<"#";
}
```

- (i) 50 # 51 # 52 # 53 # 54 # 55 #  
(ii) 52 # 53 # 54 # 55  
(iii) 53 # 54  
(iv) 51 # 52 # 53 # 54 # 55 #

- Q.2 (a) How is Polymorphism implemented in C++? Give an example to illustrate. 2  
(b) What is the difference between static, and non static data members of a class. 2  
(c) Answer the questions (i) and (ii) from the given class declaration.

```
class Examination
{ int Exam_Room_No;
  int No_of_Candidates;
  char subject [ 20 ] ;
public : Examination ( int, int, char*); //constructor1
        Examination ( Examination & value); // constructor 2.
        ~Examination ( ); //F3
};
```

- (i) Write a statement that will invoke constructor 1  
(ii) Write complete definition of constructor 2.  
(iii) Which concept of object oriented programming is demonstrated by taking constructor 1 & constructor 2 together.  
(iv) What is F3 in the above code. When does it get invoked. 4

- (d) Define a class STATE in C++ with the following description :-  
Private members :-

- Name of the state ( type string )
- Population ( type long int )
- Number of girls under 16 years of age ( type long int)
- Total no. of girls under 16 years of age attending school ( type long int )
- A member function ( AL\_PER ( ) ) to calculate and return the percentage of girls attending school as ( Number of girls attending school / Total girls  $\times$  100 )

Public member

- A constructor to assign value of name of the state as "NOT ALLOTIED";
- A function GIVEDETAILS ( ) to allow user to enter data for all data members.
- A function SHOW\_DETAILS ( ) to allow user to view data members along with the percentage of girls attending the school. 5

- (e) Read the following class declaration and answer the questions from (i) to (iv)

```
class kitchen_Products
{
    char Model_No [ 10 ];
    char company _ Name [ 20 ] ;
    int year ;
protected :
    void getit ( )
```

```

        void showit ();
};

    class fridge : public kitchen_products
    {
        protected : int capacity;
        long price;
        char color [ 12 ];
        public :
        void Read _ it ();
        void Print _ it ();
};
class stock : protected fridge
{
    int stock _ In _ Hand ;
public ;
    int sold _ Number;
    void get _ Data ();
    void Dis _ Data ();
};

    stock FRIDGE ;
    void main () { ----- }

```

- (i) What is the size of the object FRIDGE in number of Bytes?  
(ii) What are the data member directly accessible by the object FRIDGE.  
(iii) What are the member functions inherited into the class stock?  
(iv) Define the function Get\_Data ( ) to input data members of object FRIDGE. 1+1+2+2=6
- (f) Consider the following declarations and answer the questions given below :

```

    class AAA
    {
        int a;
        protected :
        int b;
        public :
        void getit ();
        void putit ();
};

    class BBB: protected AAA
    {
        int a, c;
        protected :
        Int d;
        public :
        void getdata ();
        void putdata ();
};

    class CCC : private BBB
    {
        int f;
        public:
        void show ();
};

```

- (i) What is the size of object of class BBB & CCC,  
(ii) Name the members that can be accessed by the object of BBB.  
(iii) Name the data members that can be accessed by the function show ( ).  
(iv) Is the member function put it ( ) accessible by object of class BBB? Justify.

- Q.3 (a) What is Normalization? Define second normal form. 4  
(b) Define : (i) Primary key (ii) Foreign key (iii) Cardinality (iv) DBMS 2  
4

(c) Given the following student relation :

Relation : STUDENT						
No.	Name	Age	Department	Date of Admission	Fee	Sex
1.	Pankaj	24	Computer	10/01/97	120	M
2.	Shalini	21	History	24/03/98	200	F
3.	Sanjay	22	Hindi	12/12/96	300	M
4.	Sudha	25	History	01/07/99	400	F
5.	Rakesh	22	Hindi	05/09/97	250	M
6.	Shakeel	30	History	27/06/98	300	M
7.	Surya	34	Computer	25/02/97	210	M
8.	Shikha	23	Hindi	31/07/97	200	F

Write solution commands for (i) to (iv) and write the outputs for (v) to (viii) :

- (i) To show all information about the students of History department.
- (ii) To list the names of Female teachers who are in Hindi department.
- (iii) To list names of all teachers with their date of admission in ascending order.
- (iv) To insert anew row in the student table with the following data.  
"Zaheer", 36 "computer", {12/03/97}, 230, "M"
- (v) Select count (DISTINCT Department) from STUDENT;
- (vi) Select MAX (Age) from STUDENT where Sex = "F";
- (vii) Select AVG (Fee) from STUDENT where Dateofadm <{01/01/98};
- (viii) Select sum (Fee) from STUDENT where Dateofadm <{01/01/98};

Q.4

- (a) State & prove Idempotent Law.
- (b) State & prove De-Morgan's Law algebraically.
- (c) Write the POS and SOP form of function F (x,y,z) from following TT.

x	y	z	f
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

(d) Draw the following logic diagram using NAND gates only.

- (i)  $(A+B).C$   
Using NOR gates only.
- (ii)  $A'B+AB'+A'B'$
- (e) Minimize the Boolean expression using K-Map.  
 $F(A, B, C, D) = \Sigma(0, 2, 4, 12, 13, 14, 15)$   
 $F(A, B, C, D) = \pi(1, 3, 4, 7, 8, 9, 14, 15,)$

Q.5

- (a) An array S[40] [30] is stored in the memory along the row with each of the element occupying 2 bytes. Find out the memory location for the element S [20] [10] if the base address of the array is 5000.
- (b) Write a function to calculate sum of a 1D array.

Q.6

- (a) Observe the program segment given below carefully and fill the blanks marked as statement 1 and statement 2 using seekp(), seekg() functions for performing the required task.  

```
# include <fstream_h>
class item
{int Ino; char item [20];
public:
//function to search and display the content from a particular record no.
```

```

void search(int);
//fun.to modify the content of a particular record no.
void modify (int);
void item : : search (int rec_no)
{
fstream file;
file open (“stock dat”, ios : : binary | ios ::in);
----- // statement1
file read ((char*)this, sizeof (item));
cout <<Ino<<”= =”<<item<<endl;
file close();
}

void item : : modify(int rec_no. )
{
fstream file;
file open (“stock dat”,ios : : binary | ios : : out);
cin>>Ino;
cin>>getline (item,20);
----- //statement 2.
file write ((char*) & this, size of (item));
file close ();
}

```

(b) Write a function in C++ to count the no. of line present in a text file “story txt”. 1

(c) WAF in C++ to search for a book no. from a binary file “Book Dat” assuming the binary file containing the abject of the following class. 2

```

class book
{
int Bno;
char Title [20];
public : int RBno.(){return Bno.;}
void enter () { cin>Bno;
get (Title);}
void display ()
{
cout<<Bno.<<Title <<endl:
}
};

```

3

**\*\*ALL THE BEST \*\***

Roll. No.

Code No. 12/NLCS/Physics/37

## Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 70

Note : Question No. 1 to 5 carry One Mark only.

Question No. 6 to 10 carry Two Marks each.

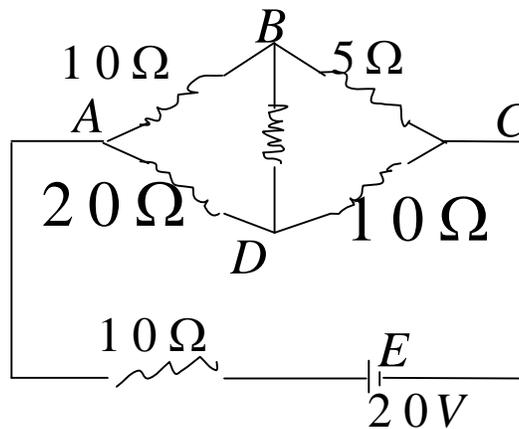
Question No. 11 to 22 carry Three Mark each.

Question No. 23 carry Four Mark only.

Question No. 24 to 26 carry Five Marks each.

- Q.1 In a certain arrangement, a proton does not get deflected, while passing through a magnetic field region. State the condition under which it possible?
- Q.2 Why an electric dipole placed in a uniform electric field does not undergoes acceleration?
- Q.3 Can the terminal potential difference of a cell exceed its emf? Give reason for your answer.
- Q.4 A wheel with a certain number of spokes is rotated in a plane normal to earth magnetic field. So that an emf is induced between the axis and rim of the wheel, keeping all other things same, number of spokes is changed. How is the e.m.f. affected?
- Q.5 Why a 220v A.C. is considered to be more dangerous than 220v D.C.?
- Q.6 Plot a graph showing the variation of coulomb force  $F$  versus  $\frac{1}{r^2}$  where  $r$  is the distance between the two charges of each pair of charges  $(1\mu c, 2\mu c)$  and  $(2\mu c, -3\mu c)$ . Interpret the graph obtained.
- Q.7 Three charges  $-q, Q, -q$  are placed at equal distance on a straight line, if the potential energy of the system of the charges is zero. What is the ratio of  $Q : q$ .
- Q.8 State and prove ohm's law in vector form?
- Q.9 If a toroid uses bismuth for its core, will the field in the core be greater or less than when the core is empty? Explain.
- Q.10 Obtain the expression for the magnetic energy stored in a solenoid, in terms of magnetic field  $B$ , area  $A$  and length  $\ell$  of the solenoid.
- Q.11 Eight charges are arranged at the corners of a cube of side  $a$  find the work required to put together this arrangement.
- Q.12 If  $n$  identical cell each of E.m.f.  $E$  and internal resistance  $r$  are connected in series with external resistance  $R$ . Find the maximum and minimum current in this condition.
- Q.13 A long straight wire of a circular cross section [radius  $a$ ] carrying steady current  $I$ . The current  $I$  is uniformly distributed across this cross section. Calculate the magnetic field in region  $r < a$ .
- Q.14 What do you understand by parameters of earth magnetic field. Explain each with suitable diagram.
- Q.15 "Lenz law is consequence for conservation of energy". Explain it with suitable example.
- Q.16 Show that in the free oscillation of an LC circuit, the sum of energies stored in the capacitor and inductor is constant is time?

- Q.17 An electrical technical requires a capacitance of  $2\mu f$  in a circuit across a potential difference of 1kv. A large number of  $1\mu f$  capacitors are available to him each of which can withstand a potential difference of not more than 400v. Suggest a possible arrangement that requires the minimum numbers of capacitors?
- Q.18 Determine the current in each branch of the network as shown in figure :-



- Q.19 An electron revolve around the nucleus in a circular orbit of radius  $r$ . Show that its magnetic moment is  $\frac{evr}{2}$ .
- Q.20 Define mutual Inductance. Find mutual Inductance of two long co-axial solenoid.
- Q.21 State Gauss law in electrostatics. Use its to find electric field intensity due to a non conducting charged plane sheet?
- Q.22 Define wheat stone bridge. Write its working principle and prove with suitable diagram.
- Q.23 One holiday few student were enjoying at your home. Suddenly the ceiling fan of the room stopped working. Out of sheer enthusiasm, one student switched off the power supply of the fan and opened the cap of the fan to check the problem. Other students tried to stop him but he did not listen. The moment he touched the interior part of the fan, he fell down because of electric shock. All friends were scared as to what has happened as the power supply was already switched off.**
- What negative trait do you think has been displayed by the student?
  - What could be the possible cause of electric shock?
  - What lesson the student had learned from this incident?

- Q.24 Consider two parallel co-axial circular coils of equal radius  $R$  and number of turns  $N$ , carrying equal currents in the same direction and separated by a distance  $R$ . Show that the field on the axis around the mid-point between the coils is uniform over a distance that is small as compared to  $R$  and is given by –

$$B = 0.72 \frac{\mu_0 NI}{R}.$$

**OR**

What do you understand by hysteresis loop. Draw  $B - H$  curve for ferromagnetic materials and explain it, use this graph to define type of ferromagnetic material.

- Q.25 Explain with the help of a labelled diagram, the principle and working of an AC generator? Find the expression for the emf generated in the coil in terms of speed of rotation. Can the current produced by an AC generator be measured with a moving coil galvanometer? Give answer and support.

**OR**

What is motional emf. Deduce an expression for the emf induced across the ends of a conductor moving in a perpendicular magnetic field. Find the force which is required to push the conductor and the power delivered by the external force. Also write the Joule heat loss per second?

- Q.26 (i) Two planes of uniform charge densities  $+2\sigma$ ,  $-\sigma$  placed parallel to each other. Find electric field intensities on (a) Left side of I plane (b) between the planes (c) right side of II plane.
- (ii) An electric field is uniform and in the direction  $E = 200\hat{i}$  N/C for  $x > 0$  and in the negative direction  $E = 200\hat{i}$  N/C for  $x < 0$ . A right circular cylinder of length 20 cm and radius 5 cm has its centre at the origin and its axis along the  $x$ -axis. So one face is at  $x = +10$  cm and the other is at  $x = -10$  cm. What is the net outward flux through the cylinder?

**OR**

- (i) Three concentric spherical metallic shells A, B and C of radii  $a, b, c$  ( $a < b < c$ ) have surface charge densities  $\sigma$ ,  $-\sigma$ ,  $\sigma$  respectively.
- (a) Find the potential of the three shells A, B and C.
- (b) If A and C are at the same potential, obtain a relation between them.
- (c) What do you understand by the dynamo effect?

**\*\*ALL THE BEST\*\***

Roll. No.

Code No. 12/NLCS/Biology/15

## Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 70

### General Instruction :-

Section A consists of 5 questions of **One Mark** each. Section B consists of 5 questions of **Two Marks** each. Section C consists of 12 questions of **Three Marks** each. Section D consists of a value based question that carries **Four Marks**. Section E consist of 3 questions of **Five Marks** each, wherein an internal choice has been provided.

### Section A

- Q.1 Why do internodal segments of sugarcane fail to propagate vegetatively even when they are in contact with damp soil? 1
- Q.2 In a test cross progeny of pea plants, that all were bearing violet flowers. Give the genotype of the parent pea plants. 1
- Q.3 Name the glycoprotein (s) present on the R.B.Cs of a person of blood group AB. 1
- Q.4 Why are green algae not likely to be found in the deepest strata of the ocean? 1
- Q.5 Define adaptation. 1

### Section B

- Q.6 List any four features evolved in animals to adapt to their parasitic mode of life. 2
- Q.7 Differentiate between multiple allelism and pleiotropy, with the help of an example each. 2
- Q.8 The male fruit fly and female fowl are heterogametic, while the female fruit fly and male fowl are homogametic. Why are they called so? 2
- Q.9 Mention the advantages of selecting pea plant for experiment by Mendel. 2
- Q.10 Thalassemia  $\alpha$  is different from thalassemia  $\beta$ . Justify. 2

### Section C

- Q.11 (a) Explain why is t RNA called an adapter. 3
- (b) Draw & label a secondary structure of t RNA. How does the actual structure of t RNA look like.
- Q.12 How is hnRNA processed to form mRNA? 3
- Q.13 Give the experimental set up of Urey and Miller's experiment and brief it. 3
- Q.14 Differentiate between Euchromatin and Heterochromatin. 3
- Q.15 List the reasons that account for the greater biological diversity in tropics. 3
- Q.16 Write a note on catalytic converter. 3
- Q.17 Who gave the Rivet Popper Hypothesis? Explain it. 3
- Q.18 What is primary productivity? What are the factors affecting it? 3
- Q.19 Discuss the hormonal changes and related events during menstrual cycle. 3

- Q.20 Describe the three different practices under natural methods of birth control. 3
- Q.21 How are ARTs helpful to humans? How are ZIFT and GIFT different from intrauterine transfers? Explain.3
- Q.22 Differentiate between external fertilization and internal fertilization with an example for each. 3

**Section D**

- Q.23 You must have seen your mother adding 3-4 globules of yeast to the idli paste she has prepared. Similarly, brewing industry uses yeast in the manufacture of alcohol. 4**
- (a) **How does such a small amount of yeast added help to produce thousands of litres of alcohol? Explain how yeast multiplies so fast?**
- (b) **Name the process carried out by yeast.**
- (c) **What value is learnt from this?**

**Section E**

- Q.24 (a) Differentiate between Autogamy, Geitonogamy and xenogamy. 5
- (b) Explain the events occurring during pollen pistil interaction.

OR

Draw well labeled diagram of human sperm and explain the function of each part.

- Q.25 What is semiconservative DNA Replication? How was it experimentally proved and by whom? 5

OR

Describe all details of Hardy Weinberg's Principle.

- Q.26 Explain the Verhulst Pearl Equation and related population growth model. 5

OR

Explain how Xerarch succession progresses from xeric to Xesic conditions and forms a stable climax community.

\*\*ALL THE BEST \*\*

## Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 100

**General instructions:**

1. All questions are compulsory. Marks for questions are indicated against each. Answer should be brief and to the point and word limit should be adhered to as far as possible.
2. All parts of a question should be answered at one place.
3. Questions 1-5 and 16-20 are MCQ carrying 1 mark.
4. Questions 6-8 and 21-23 are short answer carrying 3 marks. Word limit not exceeds 60 words each.
5. Questions 9 -11 and 24-26 carrying 4 marks word limit 70.
6. Question 12-15 and 27-30 carrying 6 marks word limit 100 words each.

### SECTION – A ( MICRO ECONOMICS )

- Q.1 The shape of transformation curve is changed by – 1  
 (a) Opportunity cost (b) total cost (c) economic cost (d) marginal opportunity cost
- Q.2 When price of both the commodities is same, the consumer attains maximum satisfaction where : 1  
 (a)  $\frac{Mu_x}{Mu_y} > \frac{P_x}{P_y}$  (b)  $\frac{Mu_x}{P_x} < \frac{Mu_y}{P_y}$  (c)  $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$  (d)  $MU_x = MU_y$
- Q.3 Substitution effect takes place when price of the commodity becomes – 1  
 (a) relatively cheaper (b) relatively dearer (c) stable (d) both (a) and (b)
- Q.4 Stage of negative returns sets in when : 1  
 (a) MP is diminishing (b) MP is rising (c) MP is negative (d) none of these
- Q.5  $MC=MR=AC=AR$  refers to long term equilibrium of a – 1  
 (a) competitive firm (b) oligopoly firm (c) monopoly firm (d) none of these
- Q.6 What is the likely effect of technological progress on the supply of a good? Explain. 3
- Q.7 Distinguish between “increase in demand and increase in quantity demanded” of a commodity. 3
- Q.8 Explain the central problem of distribution of income? 3
- Q.9 Price elasticity of demand of a good is (-) 3. If the price rises from Rs. 10 per units to Rs. 12 per unit, what is percentage change in demand? 4
- Q.10 Complete the following table : 4

Price (Rs.)	Output (Units)	Total Revenue (Rs.)	Marginal Revenue (Rs.)
7	-	7	-
-	2	10	-
-	3	-	(-) 1
1	-	-	(-) 5

Q.11 Elasticity of demand is generally high during the long period compared to the short period. Why? 4

**OR**

An individual is both the owner and the manager of a shop taken of rent. Identify implicit cost and explicit cost from this information. Explain.

Q.12 Explain the concept of PPC with the help of example. 6

Q.13 “Monotonicity of preference implies that the indifference curves are downward sloping”. Explain with the help of schedule and diagram. 6

Q.14 Read the following table carefully, explain the reason behind the behavior of marginal product in it. 6

Factor 1	TP	MP
0	0	-
1	10	10
2	24	14
3	40	16
4	50	10
5	56	6
6	57	1

Q.15 Explain the conditions of producer’s equilibrium in terms of marginal cost and marginal revenue. Use a schedule. 6

**OR**

Giving reasons, state whether the following statement are true or false –

- (i) When there are diminishing returns to a factor, total product always decrease.
- (ii) Total product will increase only when marginal product increase.
- (iii) When marginal revenue is zero, average revenue will be constant.

**SECTION – B (MACRO ECONOMICS)**

Q.16 Which of the following is not a compensation of employees ? 1

- (a) Free holidays
- (b) free lunch
- (c) Employees contribution
- (d) Bonus paid by employer to social insurance

Q.17 Which of the following is consumption good? 1

- (a) Vegetables in house
- (b) Raw material
- (c) Use of a truck
- (d) Use of tools

Q.18 Which of the following money presently prevails in India? 1

- (a) Metallic money
- (b) Near money
- (c) Coins and paper currency
- (d) All of these

Q.19 Which of the following stage is found when economy is not in equilibrium? 1

- (a) inflation
- (b) deflation
- (c) Recession
- (d) Any of these

Q.20 Size of multiplier varies directly with which of following – 1

- (a) APS
- (b) APC
- (c) MPS
- (d) MPC

Q.21 Derive the saving function from the consumption function .  $C = \bar{a} + by$  3

Q.22 Explain the circular flow of Income in a two sector model. 3

- Q.23 Explain the “**Lender of last resort**” function of the Central Bank. 3
- Q.24 State whether the following statements are true or false. Give reasons for your answer : 4
- (i) When marginal propensity to consume is greater than marginal propensity to save, the value of investment multiplier will be greater than 5.
- (ii) The value of marginal propensity to save can never be negative.
- Q.25 Giving reasons categories the following into stock and flow : 4
- (i) Capital (ii) saving (iii) Gross domestic product (iv) wealth
- Q.26 Calculate Net national disposable income from the following data : 4

Items	(i in crores)
(i) Gross	4000
(ii) Net current transfer to rest of the world	(-20)
(iii) Net indirect taxes	150
(iv) Net factor income to abroad	60
(v) National debt interest	70
(vi) Consumption of fixed capital	200
(vii) Current transfer from Govt.	150

**OR**

What is operating surplus. State its components?

- Q.27 Draw a straight line consumption curve. From it derive a saving curve explaining the process. Show on this diagram : 6
- (i) Level of income at which APC is equal to one.
- (ii) A level of income at which APS is negative.
- Q.28 Explain the process of money creation by commercial banks. 6
- Q.29 From the following calculated NI by (i) Income method (ii) Expenditure method : 6

Items	(i in crores)
(i) Net domestic capital formation	360
(ii) Interest	200
(iii) Dividend	150
(iv) Rent	300
(v) Private final consumption expenditure	1300
(vi) Govt. final consumption expenditure	730
(vii) Net export	-20
(viii) Net indirect taxes	70
(ix) Net current transfer from rest of the world	80
(x) Consumption of fixed capital	60
(xi) NFIA	(-50)
(xii) Undistributed profit	200
(xiii) Profit	600
(xiv) Compensation of employees	1200
(xv) Wages and salaries	500

Q.30 Briefly explain the situation of full employment, under employment and over full employment with the help of a diagram.

6

**OR**

Calculate the following :-

	(a) Private income	(b) Personal disposable income	(c) Personal income
Items	(i in crores)		
(i) Savings of Non-departmental enterprise			80
(ii) Factor income from Net domestic product accruing to private sector			500
(iii) Corporation Tax			30
(iv) Savings of Private corporate sector net of Direct taxes paid by household			20
(v) Current transfer from Govt. Administrative department			10
(vi) Factor income from Abroad			5
(vii) Current transfer from rest of the world			20
(viii) Operating surplus			150
(ix) Factor income to Abroad			15

**\*\*ALL THE BEST \*\***

Roll. No.

Code No. 12/NLCS/Chemistry/37

## Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 70

General Instruction :-

Question No. 1 to 5 carry **One Mark** each.

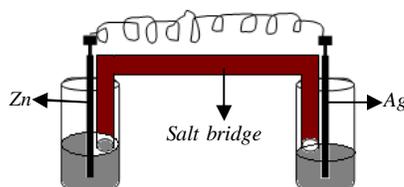
Question No. 6 to 10 carry **Two Marks** each.

Question No. 11 to 22 carry **Three Marks** each.

Question No. 23 carry **Four Mark**.

Question No. 24 to 26 carry **Five Marks** each.

- Q.1 A compound is formed by two elements, M and N. The element N forms CCP & atoms of M occupy  $\frac{1}{3}$ <sup>rd</sup> of tetrahedral voids. What is the formula of the compound? 1
- Q.2 When & why is molality preferred over molarity in handling solution in chemistry? 1
- Q.3 What is meant by cell constant? 1
- Q.4 Oxygen is available in plenty in air yet fuels do not burn by themselves at room temperature. Why? 1
- Q.5 Why Ferric Chloride preferred over potassium Chloride in case of a cut leading to bleeding? 1
- Q.6 Name one chief ore each of Copper and Aluminum. Name the method used for concentration of these two ores. 2
- Q.7 Give the structural formula & IUPAC name of the following – (i) BHC (ii) DDT 2
- Q.8 You are given benzene, Conc.  $H_2SO_4$ , NaOH. Write the equation for the preparation of Phenol using these reagents. 2
- Q.9 Arrange the following in increasing order of the acidic character. 2  
 $HCOOH$ ,  $CH_2Cl-COOH$ ,  $CF_3-COOH$ ,  $CCl_3-COOH$ .
- Q.10 Silver crystallizes in fcc lattice. If the edge length of the cell is  $4.077 \times 10^{-8}$  cm and density is  $10.5 \text{ gm cm}^{-3}$ . Calculate the atomic mass of Silver. 2
- Q.11 What will happen to freezing point of KI (aq. Solution) when  $HgI_2$  is added to the solution? 3
- Q.12 Consider the figure and answer the question : (i) write the direction if  $e^-$  flow (ii) which is Anode & Cathode (iii) what will be happened if salt bridge is removed? 3



- Q.13 What is meant by a pseudo 1<sup>st</sup> order reaction? Give suitable example. 3
- Q.14 Explain the role of : (i) cryolite in electrolytic reduction of Aluminum (ii) Carbon monoxide in purification of Nickel. 3
- Q.15 Discuss the effect of pressure & temperatures on the adsorption of gases on solid. 3
- Q.16 Differentiate retention & inversion? 3
- Q.17 What is meant by hydroboration – oxidation reaction? Illustrate with an example? 3

- Q.18 Draw the structure of :- 3
- (i) 2, 4 dinitrophenylhydrazone of benzaldehyde (ii) Cyclopropanone oxime
- (iii) Acetaldehydedimethyl acetal 3
- Q.19 Write a short note on semiconductors : (i) P.type (ii) n-type 3
- Q.20 Discuss biological & industrial importance of osmosis? 3
- Q.21 Explain Kohlrausch's law. Mention one application of it. 3
- Q.22 Explain the factors on which the rate of reaction depends. 3
- Q.23 The half life for decay of  $^{14}\text{C}$  is 5730 years. An archaeological artifact contained wood that had only 80% of the  $\text{C}^{14}$  found in living tree. Estimate the age of the sample.** 4
- Q.24 Give four example of heterogeneous catalysis. 5

OR

Define the terms –

- (i) Micelles (ii) peptisation (iii) Desorption
- Q.25 Write the meaning of – (i) cynohyryne (ii) Acetal (iii) Aldol (iv) Imine (v) Ketal 5

OR

Give chemical test to distinguish –

- (i) Propanal & Propanone (ii) Phenol & benzoic acid
- Q.26 Explain the following terms :- 5
- (i) Electrophoresis (ii) Co-agulation (iii) Dialysis (iv) Tyndall effect

OR

- (i) Alcosol (ii) Aerosol (iii) Hydrosol

**\*\*ALL THE BEST \*\***

Roll. No.

Code No. 12/NLCS/Business Studies/70

## Quarterly Examination 2015 – 16

Time: 3:00 Hrs.

M. M. 80

General Instruction :-

This Question paper consists of 25 Questions.

- Question No. 1 to 8 carry **One Mark** each. Answer should be in One Word OR One Sentence.
- Question No. 9 to 14 carry **Three Marks** each. Answer should be in about 50-75 words.
- Question No. 15 to 19 carry **Four Marks** each. Answer should be in about 75-100 words.
- Question No. 20 to 22 carry **Five Marks** each. Answer should be in about 75-100 words.
- Question No. 23 to 25 carry **Six Marks** each. Answer should be in about 200 words.

- Q.1 “**Success of business is not by chance but a result of deliberate process.**” Name the process. 1
- Q.2 Explain the “**contingent**” nature of principles of management. 1
- Q.3 “**Manager are busy all the time planning for the organization.**” Identify the feature of planning. 1
- Q.4 Define “**Standing plans**” 1
- Q.5 State the point of origin for authority 1
- Q.6 Name the selection process which shortlists the candidates. 1
- Q.7 Name the principle which ensures effective directing. 1
- Q.8 Define “**Exchange mechanism**”?. 1
- Q.9 Explain the principle which states that there should be clear and fair agreements. 3
- Q.10 A pharma company does not mention the date of manufacturing and date of expiry on its products. 3
- (i) Identify the value ignored by the producer.
- (ii) What are responsibility of a consumer while buying products from him?
- Q.11 Distinguish between marketing and selling. 3
- Q.12 Explain with the help of an example the “**pervasive**” characteristic of the management. 3
- Q.13 The CEO of XYZ Ltd. An automobile enterprise dreams of his company becoming the best player in future for which he sets the objectives, forecasts the future and develops various courses of action. 3
- (i) Identify the mgt. function, which is highlighted here?
- (ii) What are the various values the CEO is striving to achieve?
- Q.14 Under what circumstances would functional structure prove to be an appropriate choice. 4
- Q.15 “**An effort to control everything may end up in controlling nothing**” explain. 4
- Q.16 Kumaran is working in a shoe manufacturing company. The management asked him to work overtime so that production can be increased to meet the increase demand in the market, but he was not paid adequate wages for extra time and so he never contributed to his maximum. 4
- (i) Which principle is violated in the above case?
- (ii) Give two positive effects of following the above principle.
- (iii) Which values can be emphasized by following the above principle.
- (iv) Which value are ignored in the above situation?
- Q.17 “**Work for all**” an NGO organizes recruitment drive for physically challenges people in corporate houses. They provide training programmes, hold regular seminars and workshops to train people to overcome their disabilities. Identify the values with “**work for all**” NGO was established and explain. 4
- Q.18 “**Decentralisation is extending delegation to the lowest level.**” Comments. 4
- Q.19 Every customer buys “convenient products” but there are other products whose unique features attracts a significant group of people. Identify the product and discuss its features. 4
- Q.20 “**Expenditure on Advertisement is a social waste**”. Do you agree? Explain. 5

- Q.21 What are deviations? Explain the need and process followed to Analyse deviations. 5
- Q.22 A company wants to modify its existing product in the market due to decreasing sales. You can imagine any product about which you are familiar. What decisions / steps should each level of management take to give effect to this decision? 5
- Q.23 Vaibhav an employee in Yamnna Ltd. Was instructed by Mr. Vinayak the production manager, to increase production of steel as there was excess stock of Raw material in the warehouse. On the other hand, Mr. Madhav the sales manager, directed him not to increase the steel production as there was low demand for steel in the market. Vaibhav was confused as to whose order to follow and hence as unable to work in a proper manner, because of overlapping of orders and instructions, Vaibhav was unable to satisfy both the bosses which led to conflict in the origin. 6
- (i) Name and explain the principle not being followed.
- (ii) Give any two Advantages of following this principle.
- (iii) Name the values that can be gained by following the above principle.

**OR**

- Suman and Sharma having some qualification are working as a managers in Alfa Ltd. Suman belong to rural area where employment opportunities are very less where as Sharma belongs to an urban area. Ignoring other differences between the two management of Alfa Ltd. Appointed both of them as assistant managers offering them same salary package. 6
- (i) Name and briefly explain the principle of management being followed in the above case?
- (ii) Identify the values on which management of Alfa Ltd. Emphasis between the two?
- Q.24 “Pricing of product is an important and effective competitive weapon in marketing which depends upon various factors.” Explain any three such factors? 6

**OR**

- “Though Advertising is one of the most frequently used media of promotion of goods and services, get it attracts lot of objection”. Explain any four such objections?
- Q.25 A major insurance company handled all recruiting, screening and training process for data entry / customer service representatives. Their competitor was attracting most of the qualified, potential employees in their market. Recruiting was made even more difficult by the strong economy and the “Job seeker’s market”. This resulted in the client having to choose from candidates who had the “Soft” skills needed for the job but lacked the paper “hard” skills and training. 6
- (i) As an HR manager what problems do you see in the company?
- (ii) How do you think it can be resolved?

**OR**

- Ms. Jayshree recently completed her post graduate diploma in Human Resource mgt. A few months from now a large steel manufacturing company appointed her as its human resource manager as of new, the company employs 800 persons and has an expansion plan in hand which may require another 200 persons for various types of additional requirements. Mr. Jayshree has been given complete charge of the company’s HR department.
- (i) Point out, what functions is she supposed to perform?
- (ii) What problems do you foresee in her job?
- (iii) What steps is she going to take to perform her job efficiently?
- (iv) How significant is her Role in the organization?

**\*\*ALL THE BEST \*\***

**Quarterly Examination 2015 – 16****Time: 3:00 Hrs****M.M. 80****Part – A****Partnership, Share Capital and Debentures**

- Q.1** Can a partner be exempted from sharing the losses in a firm? If yes, under what circumstances? (1)
- Q.2** When an asset is taken over by a partner, why is his capital account debited? (1)
- Q.3** Apart from location and profitability, list any two other factors affecting Goodwill of a firm. (1)
- Q.4** Can 'Securities premium' be used as working capital? Give reason in support of your answer. (1)
- Q.5** What is the nature of interest on Debentures? (1)
- Q.6** Vinod Limited purchased assets of Fukrey Limited for Rs.8,40,000 and took over the liabilities(creditors) of Rs.80,000 for an agreed purchase consideration of Rs.8,00,000. Vinod Limited issued 12% debentures of Rs.100 each at 25% premium for purchase consideration.  
Pass necessary Journal entries in the books of Vinod Limited. (3)
- Q.7** A and B were partners in a firm sharing profits in 3:2 ratio. They admitted C and D as new partners. The new profit sharing ratio will be 2:2:1:1. C and D brought Rs.2, 75,000 each for their respective capitals and also necessary amount of premium for goodwill in cash. Goodwill was valued at Rs.2,40,000 for the firm. Calculate sacrificing ratio of A and b and pass necessary Journal entries for the above transactions in the books of the firm. (3)
- Q.8** Sachin Limited has 80,000; 8% Debentures of Rs.100 each due for redemption on 31<sup>st</sup> March,2014. Assume that Debenture Redemption Reserve has a balance of Rs.8,00,000 on that date.  
Record necessary journal entries at the time of Redemption of Debentures. (3)
- Q.9** Apsara Limited forfeited 1,000 shares of Rs.10 each, issued at a premium of Rs.1 per share, for the non-payment of the first call of Rs.2 per share. The final call of Rs.3 per share has not yet been made. Subsequently, 400 of these shares were reissued at Rs.5 per share, Rs.7 paid-up, and 600 reissued at Rs.7 per share fully paid. Journalize the transactions to record the forfeiture and reissue of shares. (4)
- Q.10** DK, EK and FK were partners in a firm sharing profits in the ratio of 5:7:8. Their fixed capitals were ; DK Rs.10,00,000; EK Rs.14,00,000 and FK Rs.16,00,000. Their Partnership deed provided for the following:  
(i) Interest on capital @ 10% per annum and Interest on drawings @12% per annum.  
(ii) Salary of Rs.20,000 per month to FK.  
DK Withdrew Rs.80,000 on 31<sup>st</sup> January, 2013; EK withdrew Rs.1,00,000 on 31<sup>st</sup> March, 2013 and FK withdrew Rs.60,000 on 31<sup>st</sup> December, 2013.  
During the year ended 31<sup>st</sup> December, 2013, the firm earned a profit of Rs.7,00,000.Prepare P/L Appropriation Account. Partners have also decided to give more jobs in their business to the economically backward women. Identify the values disclosed by the partners. (4)
- Q.11** A, B and C are partners in a firm sharing profits in the ratio of 3 : 2: 1. Their balance sheet as at31.12.2004 was as under:

<b>Liabilities</b>	<b>Amount (rs.)</b>	<b>Assets</b>	<b>Amount (Rs)</b>
Creditors	46,000	Cash in hand	18,000
General Reserve	12,000	Debtors 25,000	
Capitals : A 40,000	1,10,000	Less: Provision 3,000	22,000
B 40,000		Stock	18,000
C 30,000		Furniture	30,000
		Machinery	68,000
		Goodwill	12,000
<b>Total</b>	<b>168000</b>	<b>Total</b>	<b>168000</b>

B retires on 1.1.2005 on the following terms:

- (a) Provision for doubtful debts will be raised by Rs.1,000.
- (b) Stock will be depreciated by 10% and Furniture by 5%.
- (c) There is an outstanding claim for damages of Rs.1,100 and it is to be provided for in the books.
- (d) Creditors will be written back by Rs.6,000.
- (e) Goodwill of the firm is valued at Rs.24,000, which is not to be shown in the books of the new firm.
- (f) B is paid in full with the cash brought in by A and C in such a manner that their capitals are inproportion to their profit sharing ratio 3:2.

Prepare Revaluation A/c, Partners Capital A/c and Balance Sheet. (6)

Q.12 X Ltd. has an Authorized capital of Rs.15,00,000 divided into 1,00,000 Equity shares of Rs.10 each and 50,000, 9% preference share of Rs.10 each . The company invited applications for all the preference shares but only 90,000 equity shares. All the preference shares were subscribed, called and paid while subscriptions were received for only 85,000 equity shares. During the first year Rs.8 per share were called. Ram holding 1,000 shares and Shyam holding 2,000 shares did not pay first call of Rs.2. Shyam's shares were forfeited after the first call and later on 1,500 of the forfeited shares were reissued at Rs.6 per share Rs.8 paid up.

(a) Show share capital in the Balance Sheet as per revised Schedule III as at 31st March 2013.

(b) Prepare relevant 'Notes to Accounts' (4)

Q.13 A, B and C are partners in a trading firm. The firm has a fixed total capital of Rs.60,000 held equally by all the partners. Under the partnership deed the partners were entitled to:

(a) A and B to a salary of Rs.1,800 and Rs.1,600 per month respectively.

(b) In the event of the death of a partner, Goodwill was to be valued at 2 years purchase of the Average profits of the last 3 years.

(c) Profit upto the date of the death based on the profit of the previous year.

(d) Partners were to be charged interest on drawings at 5% p.a. and allowed interest on capitals at 6% p.a.

B died on 1.1.2011. His drawings to the date of death were Rs.2,000 and the interest thereon was

Rs.60. The profits for the three years ending 31.3.2008, 2009 and 2010 were Rs.21,200; Rs.3,200

(Dr.) and Rs.9,000 respectively.

Prepare A's Capital Account to calculate the amount to be paid to his executors. (6)

Q.14 Following is the Balance Sheet of X and Y, who share profits and losses in the ratio of 4 : 1, as at 31st March 2012

Liabilities	Amount (rs.)	Assets	Amount (Rs)
Sundry Creditors	8,000	Bank	20,000
Bank Overdraft	6,000	Debtors	17,000
X's Brother's Loan	8,000	Less : P.B.D.	2,000
Y's Loan	3,000	Stock	15,000
Investment Fluctuation fund	5,000	Investments	25,000
Capitals :		Buildings	25,000
X 50,000		Goodwill	10,000
Y 40,000	90,000	Profit and Loss A/c	10,000
<b>Total</b>	<b>120000</b>	<b>Total</b>	<b>120000</b>

The firm was dissolved on the above date and the following arrangements were decided upon :

(i) X agreed to pay off his brother's loan.

(ii) Debtors of Rs.5,000 proved bad.

(iii) Other assets realized :- Investments 20% less ; and goodwill at 60%.

(iv) One of the creditors for Rs.5,000 was paid only Rs.3,000.

(v) Buildings were auctioned for Rs.30,000 and the auctioneer's commission amounted to Rs.1,000.

(vi) Y took a part of stock at Rs.4,000 (being 20% less than the book value) and balance stock was realized 50%.

(vii) Realisation expenses amounted to Rs.2,000.

Prepare Realisation Account, Partners Capital Account and Cash Account. (6)

- Q.15 X and Y were partners in a firm sharing profits in 3 : 1 ratio. They admitted Z as a new partner for 1/4<sup>th</sup> share in the profits. Z was to bring Rs.20,000 as his capital and the capitals of X and y were to be adjusted on the basis of Z's capital in the profit sharing ratio. The balance sheet of X and Y on 31.3.2006 was as follows:

Liabilities	Amount (Rs.)	Assets	Amount (Rs)
Sundry Creditors	18,000	Cash	5,000
Bills Payable	10,000	Debtors	17,000
General Reserve	12,000	Stock	12,000
Capitals : X 25,000		Machinery	21,000
Y 10,000	35,000	Building	20,000
<b>Total</b>	<b>75000</b>	<b>Total</b>	<b>75000</b>

Other terms of agreement on Z's admission were as follows:

- Z will bring Rs.6,000 for his share of goodwill.
- Building will be valued at Rs.25,000 and Machinery at Rs.19,000.
- A Provision at 5% on debtors will be created for bad debts.
- Capital accounts of X and y were adjusted by opening current accounts.

Prepare Revaluation A/c, Partners Capital A/cs and Balance Sheet of new firm. (8)

- Q.16 K limited has been registered with an authorized capital of Rs. 2,00,000 divided into 2,000 shares of Rs.100 each of which 1,000 shares were offered for public subscription at a premium of Rs.5 share, payable as under :

On application 10,

On allotment 25 (including premium),

On first call 40,

On final call balance

Applications were received for 1,800 shares, of which applications for 300 shares were rejected outright, the rest of applications were allotted 1,000 shares on pro-rata basis. Excess Application money was transferred to allotment, All the money were duly received except from Sundar, holder of 100 shares, who failed to pay allotment and first call money. His shares were later forfeited and reissued to Shyam at Rs.60 per share, Rs 70 paid up. Final call has not been made. Pass necessary Journal entries in the books of K limited.

By rejecting 300 shares, which values are ignored by the management? (8)

### Part – B Financial Statement Analysis

- Q.17 State with reason whether charging of depreciation on furniture will result into inflow, outflow or no flow of cash. (1)
- Q.18 Interest received by a finance company is classified under which kind of activity while preparing Cash Flow Statement. (1)
- Q.19 State how qualitative aspects are ignored in Financial Statement Analysis. (1)
- Q.20 Give major heads and sub heads under which following items will be disclosed in the Balance sheet as per schedule III Part I Companies Act, 2013. (3)
- Debenture redemption reserve
  - Mining rights
  - Bank Balance
- Q.21 Prepare a comparative statement of profit and loss from the following statement of profit and loss of VK Limited for the years ended 31<sup>st</sup> March, 2010 and 2009. (4)

Particulars	31 March 2010	31 March 2009
Revenue from operations	300% of cost of material consumed	200% of cost of material consumed
Cost of material consumed	12,00,000	10,00,000
Other Expenses	20% of cost of material consumed	10% of cost of material consumed
Tax	50%	50%

- Q.22 Calculate 'Return on Investment' and 'Debt Equity Ratio' from the following information : (3+1=4)

Net Profit after interest and tax	3, 00,000
10% Debentures	5, 00,000
Tax Rate	40%
Capital Employed	40, 00,000

Q.23 Following is the Balance Sheets of Greenland Limited as on 31<sup>st</sup> March 2012:

<b>Particulars</b>	<b>Note No.</b>	<b>31<sup>st</sup> March 2011-12 (Rs.)</b>	<b>31<sup>st</sup> March 2010-11 (Rs.)</b>
<b>I. Equity and Liabilities</b>			
<b>1. Shareholders' Funds</b>			
(a) Share Capital		12,00,000	8,00,000
(b) Reserves and Surplus (Profit Balance)		3,50,000	4,00,000
<b>2. Non-current Liabilities</b>			
Long-term Borrowings : Bank Loan		4,40,000	3,50,000
<b>3. Current Liabilities</b>			
(a) Trade Payables (Creditors)		60,000	50,000
<b>Total</b>		<b>20,50,000</b>	<b>16,00,000</b>
<b>II Assets</b>			
<b>1. Non-current Assets</b>			
(a) Fixed Assets:			
(i) Tangible Assets : Machinery		12,00,000	9,00,000
<b>2. Current Assets</b>			
(a) Inventories (Stock)		2,00,000	1,00,000
(b) Trade Receivables (Debtors)		3,10,000	2,30,000
(c) Cash and Cash Equivalents		3,40,000	3,70,000
<b>Total</b>		<b>20,50,000</b>	<b>16,00,000</b>

Adjustments:

- (i) The Company paid interest Rs.36,000 on its long term borrowings.
- (ii) Depreciation provided on fixed assets during the year amounted to Rs.1,20,000.

(6)

**\*\* ALL THE BEST \*\***

**Quarterly Examination 2015 – 16****Time: 3:00 Hrs****M.M. 70****Part - A**

Q.1	Enlist the common Adventure Sports Activities.	1
Q.2	What are carbohydrates?	1
Q.3	Explain the correct standing posture.	1
Q.4	Write about fine motor development.	1
Q.5	What do you mean by quality of life?	1
Q.6	State food supplement.	1
Q.7	State Menarche.	1
Q.8	Define Menopause.	1
Q.9	Make a note on Indian women in sports.	1
Q.10	What do you mean by AAPHER.	1
Q.11	What do you mean by cardiac-output?	1
Q.12	Briefly explain the advantages and disadvantages of knock out tournament.	3
Q.13	Draw a fixture of 21 teams on the basis of knock-out tournament.	3
Q.14	Make a league fixture for 15 teams on cyclic and staircase method.	3
Q.15	Define leader, give importance of student leader.	3
Q.16	Write a note on eating disorder.	3
Q.17	What are the postural deformities. Explain Lordosis.	3
Q.18	Discuss the procedure of administering Rockport test.	3
Q.19	Explain the effects of training on cardiovascular system.	3
Q.20	Define adventure sports, mention various adventure sports. Explain camping.	1+1+3=5
Q.21	What factors should be considered for making Balanced Diet. How energy requirement of an individual is calculated.	5
Q.22	Mention the cause of spine deformity. How the spine deformities can be corrected?	5
Q.23	Explain in detail the activities for quality life.	5
Q.24	Explain Female Athlete Trided.	5
Q.25	Discuss the procedure of performing Harvard step test.	5
Q.26	Explain the gender differences on physiological parameters.	5