Roll. No. ☐

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs.   **M. M. 100**

Q.1   What do you mean by casting? Explain by example.   2

Q.2   Explain any two advantage of petty cash book.   2

Q.3   What is contra entry? Explain by example.   2

Q.4   Write any three difference between bills of exchange and promissory note.   3

Q.5   What do you mean by depreciation? Explain any two needs of depreciation.   3

Q.6   Write any three difference between Trial Balance and Balance Sheet.   3

Q.7   Prepare opening entry from following balances   3

Particulars	Amount(`)	Particulars	Amount (`)
Creditors	15000	Machinery	40000
Debtors	22000	Capital	60000
Bills receivable	25000	Cash	18000
Bills Payable	23000	Loan from bank	12000

Q.8   Define personal account and Nominal account and write debit- credit rules for both.   4

Q.9   Prepare accounting equation from following transactions   4

  (a) Business started with cash and stock `50,000 & ` 20,000 respectively.

  (b) Goods purchased ` 30,000 from Govind. (2% cash discount, 50% cash paid)

  (c) Machinery purchased on credit ` 18000

  (d) Goods sold to Kailash (cost ` 20,000 ; Profit 25% on cost)

Q.10 Prepare closing entries for following account   4

  (a) Wages A/c   (b) sales return A/c   (c) Profit and loss A/c (net profit)   (d) Drawings A/c

Q.11 Calculate maturity date for following bills   4

	Date of bill	Duration
(a)	January 16, 2016	120 days
(b)	August 2, 2016	2 months
(c)	November 12, 2015	90 days
(d)	October 26, 2015	3 months

Q.12   On 1st Jan. 2012 a firm bought a machine for ì 270000 and spent ì 18000 on its installation and
ì 12000 on its carriage. Estimated life of the machine 10 years & estimated scrap value of machine
ì 60000. Find the amount of Depreciation and prepare machine account for two years?   4

Q.13 Prepare sales book from following transactions   4

  April 4, 2014   Goods sold to Nakoda traders

                         40 coolers @ 2400 each

                         60 Fans @ 1200 each

                         30 mixers @ 1500 each

                         Trade discount-10%

April 20, 2014   Goods sold to Charbhuja Traders

          50 coolers @ 2600 each

          20 Fans @ 1500 each

          30 mixers @ 2000 each

          Trade discount- 5%

Q.14 Give Journal entries for following transactions   4

   February 15, 2014   Goods sold to Sachin ` 2,00,000

            (Trade discount 10%, Cash discount 5%, 60% on credit)

   February 15, 2014   Sachin become insolve only 30% amount received from him

Q.15 Give rectify journal entries for following error--   6

   (a) Furniture purchased ` 3200 but recorded in purchase book ` 2000

   (b) Goods ` 1000 used for personal use but not recorded in books.

   (c) Goods return by Shyam `1800 but recorded debit side of his account.

   (d) Salary paid to Vikas ` 2500 but debited to Vikas account ` 500

Q.16 Prepare a Bank Reconciliation Statement from following information   6

   (a) Pass book shows credit balance ` 21400

   (b) cheque deposited in to the bank but not collected by bank ` 5300.

   (c) Dividend collected by bank ` 1500 but not entered in cash book.

   (d) Pass book deposit column total under cast by ` 3000

   (e) cheque issued ` 1600 but entered debit side of cash book .

Q.17 Prepare a double column cash book from following transactions of September 2015 6

   Date   Transactions

   1.   Business started with cash ` 120000

   4.   Open a bank account with ` 50000

   8.   Goods purchased from Rahul ` 20000 with cash.

   13.   Goods purchased ` 20000 and payment made by cheque with 10% cash discount.

   15.   Goods sold ` 28000 and amount deposited in to the bank.

   20.   Rent paid to Ravi ` 5000

   25.   Cheque received for commission ` 3500

   26.   Cash withdrawn for personal use ` 1500

   29.   Cheque of commission deposited in to the bank

Q.18 Prepare machine account for four years from following information's   8

   01-04-2012   Purchase machine ` 2,00,000

   01-10-2012   Purchase second machine ` 5,00,000

   30-09-2013   Sold second machine ` 3,50,000

   01-12-2014   Purchase third machine ` 6,00,000

           Depreciation charged on machine @ 10% per annum on written down value on 31st December of each year

Q.19   P sold goods of ì 15000 to Q. on 1st Jan. 2010 and draws a bill on the same day for three months. Q accepts it and returns it to P, who discounts it on the same date with his bank at 12% P.A. The bill is dishonored on the due date and the noting charges were paid by bank ì 500. on 4th April 2010 Q paid `5000 and noting charges in cash and accepts a bill at two months for the amount due to P together with interest at 12% per annum. On the due date of new bill, Q paid amount of bill with 2% discount. Pass journal entries to record these transactions in the book of Q.   8

Q.20   From following trial balance prepare financial statement   10

Trial balance for the year ending 31-03-2016

Debit balances	Amount	Credit balances	Amount
Opening stock	23000	Sales	250000
Wages	6000	Purchase return	10000
Carriage inwards	4000	Commission	13000
Furniture	75000	Capital	177000
Goodwill	12000	Creditors	22000
Royalty	8000	Bills payable	15000
Discount	3000	Rent	4000
Salaries	15000	Discount	3000
Debtors	32000		
Cash in hand	16000		
Bills receivable	18000		
Building	95000		
Bad debts	7000		
Interest	2000		
Drawing	8000		
Purchase	150000		
Sales return	20000		
Total	**494000**	**Total**	**494000**

Closing stock ` 28000

ORAL   →   10

****

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs. **M. M. 100**

General Instruction :-

SECTION – A   READING   20

SECTION – B   WRITING & GRAMMAR   30

SECTION – C   LITERATURE & LONG READING   30

SECITON – D   LISTENING SKILL & SPEAKING SKILL   20

SECTION – A 20 Marks READING

Q1. Read the passage given below and answer the following questions:

Monopolies are bad in national politics and worse in international politics. The unipolar world led by the US is an example of political monopoly. In the language of history and politics, monopolies are discussed in terms of balance of power. What we have today is an imbalance of power. The US- led war against Iraq needs to be seen in the context to this imbalance. There has been much talk about the need for a multi polar world as an ideal solution to the existing anarchy in the international arena. The US and UK combine have been considered to be the perpetrators of the war. They disregarded global public opinion and have gone outside the mandate of the United Nations. This is an indication of the US considering it the only super power. Its might is in two domains: one, military and the other, economic. On every issue of any importance that confronts foreign policy making of any country, the US interests become vital. This omnipresence of the US makes it different from any other country. Some political observers argue that this is temporary. But we are moving from a bipolar to a multipolar world. In dealing with a big power, a smaller power must choose either balancing or hiding or opposing. In a unipolar world, the general trend of foreign policy will be to oppose. Middle powers will need to oppose less than small powers and on particular issues may be able to balance or hide.

A1.1 Choose the correct options   1×6=6

  (a) For initiating the war, the author of the passage
    (i) Apprecates the joint action of US and UK.
    (ii) Consider the war as unjustified and blames the US and UK.
    (iii) Thinks that the United Nations should have admired the US and UK.
    (iv) Blames the Global Public Opinion.
  (b) According to the author, the world is heading towards.
    (i) Multipolar from Bipolar   (iii) Bipolar from Multipolar
    (ii) Bipolar from Unipolar   (iv) Unipolar from Multipolar
  (c) The Unipolar world led by the US is an example of.
    (i) Economic monopoly   (iii) Political monopoly
    (ii) Social monopoly   (iv) Cultural monopoly.
  (d) Who are considered as perpetrators of the war?
    (i) US   (ii) UK   (iii) Both   (iv) None of the Above
  (e) The Word "Omnipresence Means".
    (i) Not present everywhere   (iii) Present everywhere
    (ii) Found only at a particular place   (iv) Rarely Found
  (f) The word "Perpetrators" means.
    (i) Beginners   (ii) Latest   (iii) Motivators   (iv) Creators

A.1.2 Answer the following Questions-   1×6=6
    (a) What is considered bad in politics?
    (b) US led war against which country?
    (c) What is an ideal solution to the existing anarchy in the international arena?
    (d) In which two domains US have its might.
    (e) What choices smaller power has in dealing with a big power?
    (f) Who will need to oppose less the big power.

Q.2 Read the passage give below and answer the following questions.

<p align="center">Corruption in "India"</p>

Power tends to corrupt and absolute power corrupt absolutely.

Corruption is a global phenomenon and it is Omni present. Corruption has progressively increased and is now rampant in our society.

Corruption in India is a consequence of the nexus between Bureau curacy, politics and criminals. India is now no longer considered a soft state . Today, the number of ministers with an honest image can be counted on fingers At one time, bribe was paid for getting wrong things done but now bribe is paid for getting right things done at right time.

India is among 55 of the 106 countries where corruption is rampant, according to the corruption perception index 2004 report released by Transparency international India the caves of corruption are many and complex. Emergence of political elite who believe in interest – oriented programmers, artificial scarcity created by the people, change in the value system and ethical qualities of men who administer, tolerance of people towards corruption, Complete back of public outcry against it. For eradicating corruption Foolproof laws should be made and the role of politicians should be minimized. Cooperation of the people has to be obtained for it. Local bodies independent of the government like LOKPALS, CVC'S etc should be formed. A new fundamental right via. Right to information should be introduced, which will empower the citizens to ask for the information they want. Stringent actions against corrupt officials will certainly have a deterrent impact.

2.1 On the bases of your reading of the above passage makes notes unit using heading & sub –
      heading.   5
2.2 Write a summary of the above passage based on your notes.   3

<p align="center">**Section - B (Writing & Grammar - 30 Marks)**</p>

Q.3 Design a poster on "**Swatch Bharat Abhiyan**" You may use Slogans.   4

<p align="center">**OR**</p>

You are secretary of the English club of your school. You plan to organize an educational tour to Rajasthan during the winter vacation. Prepare matter for the school notices board in about 50 words, mentioning the schedule of the tour, expenses to be in cured, permission letter from the parents and last date for giving names.

Q.4 You are Dina / Ravi. You have heard your teacher talk to your class about the importance of
      inculcating the reading habit you name taken down same notes with two help of the given
      information and your own ideas write an article on the topic:- "Books are our friends forever" in
      150 Words.   6
      Reading: - Excellent diversion; Pleasant hobby; helps connect with noblest minds of the ages.
      Books - Shape Character, best companions in loneliness.

Q.5 You are R. Ashokan estate Manager, Loreto convent school, Shimla. The Principal of the school
      has asked you to place an order for two Mahindra Buses. Place the order with Mahindra
      Automobiles, Delhi.   10

Q.6 Reading the following passage and write the missing word along with the word that comes before and the word that comes after it. 8×½ =4

When I knocked at main door	(a) _____
There was reply. I	(b) _____
Waited for time	(c) _____
I felt little annoyed	(d) _____
With man. He had	(e) _____
Made requests to me	(f) _____
To visit house	(g) _____
Suddenly old man appeared there	(h) _____

Q.7 Fill in the correct from of verbs given in the brackets 8×½ =4
I ……… (**Study**) in this college for two years and up to now I ……….. (**Have**) no difficulty to satisfying my teachers. Last week one day, I ………. (**Take**) "French Leave" in the afternoon and ……….. (**Go**) to see a film. I……….. (**Enjoy**) it very much. My favourite stars …………. (**act**) in it and they have acted very well. I went out during the interval and I ………….. (**Notice**) a tall man, who ……….. (**Stand**) near the tea stall.

1×2=2

Q.8 Rearrange the words to make a meaningful sentence
(i) Foremost / was the / period / Leonardo / of / his / painter.
(ii) String / I wanted / some / was none / there / but / house / in the.

SECTION – C (LITERATURE - 30 Marks)

Q.9 Read the extract from the poem and answer the following questions : 1×3=3

And who art thou? Said I to the soft falling shower,

Which, strange to tell, gave me an answer, as here translated;

I am the poem of Earth, said the voice of the rain.

(i) What did the poet ask?

(ii) Why was it "strange to tell"?

(iii) What does the rain call it self? Why?

Q.10 Answer **any three** from the following questions : 3×3=9
(i) There is a parallel drawn between rain and music in the poem. 'The voice of the Rain'. Explain the similarity between the two.
(ii) What does the word "Cardboard" denote in the poem 'A photograph'? Why has this word been used?
(iii) What is propagated by the concept of sustain able expansion?
(iv) What generated the interest of the world in king Tut?
(v) "I think it's not facts that matter but ideas". To whom did Albert Einstein say this and why?

Q.11 Answer the following questions in 150 words :
(i) Why was Albert Miserable in Munich? 6

OR

Comment on the influence of English the language and the way of life- On Indian life as reflected in the story Ranga's Marriage. What is the narrator's attitude to English?

(ii)   "The Earth's vital signs reveal a patient in declining health". What are these "Vital sign"?

6

OR

What are the four systems that sustain life on earth? What threats are they facing?

(iii)   Mother's Day is a humorous and satirical depiction of the status of the mother in the family. What are the issues is raises? Do you agree with the resolution?   6

OR

How did Virginia come across the ghost of sir Simon de Canterville? What revelations did the ghost make before her?

SECTION –D (LISTENING SKILLS & SPEAKING SKILLS)   20

All The Best

Roll. No. [ ] Code **No.** 11/Computer Sc/NLCS/38

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs. **M. M. 70**

Q.1 Identify the generation of computers. Following keywords belong to (Any Six) : ½×6=3
 (i) Transistor (ii) Vacuum tube (iii) Magnetic takes
 (iv) Integrated circuits (v) VLSI (vi) Micro computer
 (vii) Parallel processing

Q.2 Write any three major strengths and weaknesses of computer? 2

Q.3 What are memory devices? Discuss RAM and ROM in detail? Also tell the resion to use secondary memory. 1+2+1=4

Q.4 What is the difference between data and information? 1

Q.5 Why does computers only understand binary codes? 1

Q.6 Explain the role of a compiler in a programming language. What type of errors it generally reports? 3

Q.7 Explain difference between call by value and call by reference with example. 4

Q.8 Difference between formal parameters and actual parameters. Also, give a suitable C++ code to illustrate both. 4

Q.9 Explain differences between UDF and library functions. 2

Q.10 Describe : (with example) 4
 (i) strlen ( ) (ii) strcat ( ) (iii) strcpy ( ) (iv) strcmp ( )

Q.11 Write programs for the followings :
 (i) WAP to print Max no from 2 nos. (simple if) 2
 (ii) WAP to check whether a given no is Armstrong or not. 2
 (i) WAP to add two ID arrays and create a new array as a result then show the contents of that new array. 3
 (ii) WAP to find second Max no from ID array. 3
 (iii) WAP to calculate and display total no of vowels and consonants in a string. 3
 (iv) WAP to print transpose of Matrix. 2
 (v) WA function to check whether a given no is prime or not. 2
 (vi) WA function to add 2 in all even number in ID array. 3

Q.12 (i) Write outputs be the output of following code fragment when the input is – 2
 (a) 'A' (b) 'C' (c) 'D' (d) 'F'

```
cin>>ch;
Switch (ch)
{   case 'A' : cout << "Grade A\n";
    case 'B' : cout << "Grade B\n";
    case 'C' : cout << "Grade C\n";
            break;
    case 'D' : cout << "Grade D\n";
    default   : cout << "Grade F\n"; }
```

 (ii) Predict the output of following codes. 1×5=5

```
(a) If (!3)
    {   cout << "Tricky \n";
    }   cout << "yes";
```

(b) If (3)

  cout << "Tricky again";

  else

  cout << "Am I right?"

  cout << "no???";

(c) If (0)

  cout << "Third time tricky";

  cout << "Am I right?";

(d) If (!0)

  cout << "Fourth time again \n";

  cout << "No??";

(e) If (0)

  cout << "Plz Not again \n";

  else

  cout << " Promise, this the last time";

  cout << " Thank God";

(iii)   # include < iostream.h>   **3**

```
              void Execute ( int & X, int Y = 200)
{             int TEMP = X+Y;
              X+=TEMP;
              If ( Y! = 200 )
              Cout << TEMP << X <<Y<<endl;
}
              Int main ( )
{             int A = 50, B=20;
              Execute (B);
              cout << A<< B<<endl;
              Execute (A,B);
              cout<<A<<B<<endl;
              Return 0;
}
```

(iv) int a [10] = { 1,2,3,4,5,6,7,8,9,10}; for(int i = 0; i < 10; i++);   **3**

  a [i –2] + 7;

  a [3]× = 5 ;

  i = i – 4 ;

  a [i –2] + = 4;

  for (i = 0; i < 10 ; i ++)

  cout << a [i] ;

Q.13 What do you understand with default argument function? Also give a suitable example. **5**

Q.14 What do you mean by local and global scope of variables. Give example too. **4**

<center>**Best of Luck**</center>

Roll. No. [   ] Code No. 11/Business Study/NLCS/72

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs.   **M. M. 100**

Q.1   Explain Black marketing.   **1**

Q.2   What you mean by "Limited Partnership"?   **1**

Q.3   Which institute is called a debtor as well as a creditor?   **1**

Q.4   Explain the term :-   (i) RTGS   (ii) EFT   **1**

Q.5   What you mean by "Business Ethics"?   **1**

Q.6   "Over capitalization is the Result of Frequent Capitalization".

Explain.   **1**

Q.7   Give the name of Bank which issue IDR First time.   **1**

Q.8   What do you mean by "participating preference shares"?   **1**

Q.9   "General Public has more trust and confidence in company as

compare to partnership". Do you agree give reason?   **3**

Q.10 Explain followings :   **1½+1½=3**

(i)   Capital subsidy   (ii) Revenue subsidy

Q.11 What do you mean by "Bank overdraft"?   **3**

Q.12 "Explain the risks to which "e-business" stands exposed and how they

can be avoided?   **3**

Q.13 What do you mean by the principles derived from social values which

guide and Govern the conduct of businessmen? Explain the factors

Governing these principles and values?   **3**

Q.14 In terms of "tax benefits", which of the two sources of finance will be

preferred by the organization. Explain.   **1½+1½=3**

Q.15 In 1971, when Janata Party Govt. came in power the Coca Cola Company and many other foreign Companies were sent back from India. Identify the reason behind such changes and explain it? **4**

Q.16 "There is no direct relation between the efforts and rewards"? Do you agree give reasons and explain the departmental undertaking? **4**

Q.17 "There is no limitation of geographical area". It is a benefit of which form of business? Explain. **4**

Q.18 Explain how a business firm play's an important role in protection of environment? **4**

Q.19 "The owner have claim over the left over income of the company only" it is a features of which source of fund? Explain other types of sources also. **1+3=4**

Q.20 "Only ten adult members having common interest are required to form it". It is a merits of which of business organization, explain other also? **1+4=5**

Q.21 "Insurance is not a contract of making profit, the purpose of Insurance is to bring back the insured in the same financial position as he has before the loss". Identify the principle of management, explain other principles also. **1+4=5**

Q.22 Explain briefly the social responsibility of business towards different interest groups. **1×5=5**

Q.23 "The Assets of the company remain free to be offered as security for loans and borrowings". Do you agree give reason. **1+4=5**

Q.24 "It help directly or Indirectly in the distribution of goods to the ultimate consumer. Do you agree give reason in support of your answer. **1×6=6**

OR

"These Industries create form utility" identify the concept and explain with examples. **1½×4=6**

Q.25 Explain the difference between Life Insurance and General Insurance. **1×6=6**

OR

Explain the financial services provided by post offices.

Q.26 What is corporate governance? Why a businessman must assume corporate governance? **1+5=6**

OR

Identify the type of social responsibilities in following statements, explain in detail.
(i) Respect the religious sentiments of all people.
(ii) Helping affected people during natural calamity like earthquake or flood.
(iii) Producing and selling goods for earning profit. **2+2+2=6**

Q.27 ABC Ltd. is not having good liquidity position. It has Invested in long term Investment projects and will get smooth cash flow after five years. It is not in a position to bear risk of fixed burden of paying interest.
(i) Suggest which source of finance is suitable for this company.
(ii) Suggest other risk factors that are to be kept in mind. **1+5=6**

OR

Rahul Ltd. is an Auto Spare Parts manufacturing Company. The company has issued equity and preference shares to meet its requirements. Other sources of finance have not been considered at all. This has resulted in payment of large amount of taxes to Government as dividend on shares is not deducted from income of the company for the purpose of tax calculation.
(i) State the source of fund.
(ii) State other factors which are kept in mind for selecting source of finance. **1+5=6**

ORAL → **10**

Best of Luck

Q.25 Enumerate the difference between a nucleotide and nucleoside. Give two examples of each with their structure?

OR

Describe various types of epithelial tissues with the help of a labeled diagram.

Q.26 List out the important features of Hemichordata?

OR

Describe modification of stem with suitable examples?

Best of Luck

Roll. No. [ ]   Code No. 11/Biology/NLCS/15

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs.   **M. M. 70**

Section A - carry One Mark each.
Section B - carry Two Marks each.
Section C - carry Three Marks each.
Section D - carry Four Marks each.
Section E - carry Five Marks each.

Section - A

Q.1   How is diversity in living world related to taxonomy?

Q.2   Name the family in which carpels of the flower are obliquely plased.

Q.3   Give the composition of triglyceride?

Q.4   If a tissue has 1024 cells at a given time, how many cycles of mitosis had the original parental single cell undergone?

Q.5   The enzyme, which is not found in C_3 plants?

Section - B

Q.6   Light plays an important role in the life of all organism. Name any 3 physiological processes in plants which are affected by light?

Q.7   Describe the role played by protein pumps during active transport in plants.

Q.8   Mention about the process synaptonemal complex.

Q.9   Which type of blood corpuscles in present in cockroach?

Q.10   Draw a labeled diagram of bacterial cell?

Section - C

Q.11   Define the term metabolism. What is its benefit for living organisms. What are its types?

Q.12   Explain about citric acid cycle by cycle diagram?

Q.13 What is the most common liverwort. Draw its well Labelled diagram. What is the nature of its thallus?

Q.14 Describe briefly the regions of the root with the diagram.

Q.15 Give difference between tracheids & vessels.

Q.16 Explain the chemiosmotic hypothesis?

Q.17 The diagram shows a section of cell memberane. Identify the components labeled A – F.
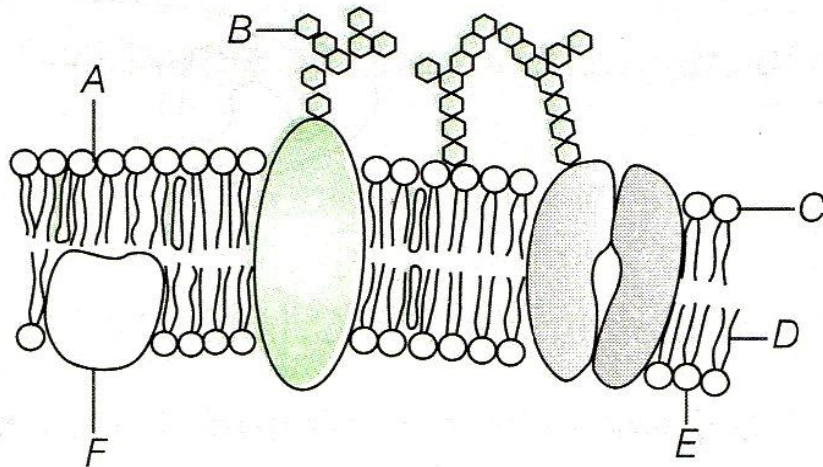
Q.18 (i)   Name the category to fats belong?

     (ii)   What is cholesterol?

     (iii) What are the 2 forms of cholesterol?

Q.19 Enumerate any three significance of mitosis. (Any Three)

Q.20 Differentiate between the apoplast and symplast pathways of movement of water in plants.

Q.21 Give only the schematic representation of nodule formation in plants.

Q.22 In what kind of plants do you come across kranz anatomy? To which condition are those plants better adapted? How are these plants better adapted than the plants, which lack this anatomy?

Section - D

Q.23 Arun visited his village in vacations to see his grandfather. He went to the field one day along with his grandfather where he observed the poor growth of the sugarcane. He discussed the issue and the reason behind this with his grandfather. The main crop in their village. His grandfather asked him to suggest some method in order to increase the yield of sugarcane in a healthy way. Being a Biology Student Arun told his grandfather to use growth promoters for plants. As he had been taught about the applications of gibberellins (GA_3) of the plant.

     (i)   What are gibberellins?

     (ii)   What are the other physiological responses influenced by gibberellins? Give any two.

     (iii) What message is conveyed by grand father & Arun character?

Section - E

Q.24 Explain ETS?

OR

Describe the following words with diagram.

(i) Synapsis   (ii) Bivalent   (iii) Chiasmata

Roll. No. [ ] Code No. 11/Economics/NLCS/72

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs.   M. M. 100

Section – A Statistics

Q.1   Questionnaires are filled by the :

(a) investigator   (b) enumerator

(c) informant   (d) None of these   **1**

Q.2   For drawing lottery -------------- sampling is used.   **1**

Q.3   A histogram is a graphical presentation of a frequency distribution of

a ----------- series.   **1**

Q.4   What is meant by presentation of data?   **1**

Q.5   Which of the following is a type of mathematical average?   **1**

(a) Median   (b) Partition value

(c) Mode   (d) None of these

Q.6   Who is known as "Father of statistics"?   **1**

Q.7   Write three importance of statistics in Economics?   **3**

Q.8   Following table shows number of students of a college corresponding

to different range of marks in statistics. Make a frequency polygon

(Graph).   **3**

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	5	10	15	20	12	8	5

Q.9   Calculate range and coefficient of range from the following data :

4,7,8,46,53,79,8,1,6,14.   **3**

Q.10   Explain the stages of statistical study.   **4**

Q.11 Following are the data about the market share of 4 brands of TV sets sold in Delhi and Mumbai. Present the data by a pie diagram. **4**

Brands of Sets	Units sold in Delhi	Units Sold in Mumbai
Samsung	480	625
Akai	360	500
Onida	240	438
Sony	120	312

OR

Present the above data in the form of percentage bar diagram.

Q.12 Calculate mean deviation and its coefficient from median from the following data : **4**

Marks	0-10	10-20	20-30	30-40	40-50
No. of Students	5	8	15	16	6

Q.13 What is meant by classification of data? State its four main merits. **6**

Q.14 Calculate the mean, median and mode of the number of persons per house in a village with the help of the following information : **6**

No. of persons per House	1	2	3	4	5	6	7	8	9	10
No. of House	26	113	120	95	60	42	21	14	5	4

Q.15 Calculate range, standard deviation and coefficient of variation of marks secured by students: **6**

50, 55, 57, 49, 54, 61, 64, 59, 58, 56.

Section – B Indian Economic Development

Q.16 What is life expectancy? 1

Q.17 When was planning commission established? 1

Q.18 The people who move around the poverty line (up and down) are called -------------- . 1

Q.19 MSP means -------------- . 1

Q.20 Worker – population ratio = -------------------- ×1000. 1

Q.21 GBD as an indicator is used to assess ---------------- . 1

Q.22 Explain the three their health care system of India. 3

Q.23 Woman in rural areas are ready to work even at low wages why? 3

Q.24 Explain the role of credit system in Rural development. 3

Q.25 Explain the statement that green revolution enabled the Government to procure sufficient food grains to build its stock that could be used during times of shortage. **4**

Q.26 Explain how import substitution can protect domestic industry. **4**

OR

Explain important and need of economic reforms since 1991.

Q.27 What is organic farming and what are its advantages? **4**

Q.28 Explain the steps taken by the Government in developing rural markets. **6**

Q.29 Education is an important ingredient of growth. Comment. **6**

OR

Explain importance of Education in human capital formation.

Q.30 Explain various reforms in different sector of economy and their impact. **6**

ORAL → **10**

Best of Luck

Roll. No. ☐ Code No. 11/Chemistry/NLCS/32

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs. M. M. 70

General Instruction :

All Questions are compulsory.
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 is a value based carrying Four Marks each.
Question No. 24 to 26 carrying Five Marks each.

Q.1 Write the IUPAC name $CH_2 = CH - CH(CH_3) - CH_3$.

Q.2 What do you mean by inert pair effect?

Q.3 Define empirical formula.

Q.4 Define Law of Triad. Give one example.

Q.5 Write the van der waals equation.

Q.6 Calculate the mass percent of solute and solvent. If 2g of substance A is added to 18g of water.

Q.7 Draw the Lewis structure of NO_2^- and NF_3.

Q.8 At 25°C and 760 mm of Hg pressure a gas occupies 600 ml volume. What will be its pressure at a height where temperature is 10°C and volume of the gas is 640ml.

Q.9 What causes temporary and permanent hardness of water?

Q.10 How the Boron family property charges –
(i) Electronegativity (ii) Atomic Radii

Q.11 Determine the molecular formula of an oxide of iron in which the mass percent of iron and oxygen are 69.9 and 30.1 respectively given that molar mass of oxide is 159.9 mol^{-1}.

Q.25 (i) Define lattice enthalpy and bond order

(ii) Draw the structure of PCl_5, C_2H_4, BCl_3.

OR

(i) Write the main Postulates of VSEPR theory

(ii) Explain the Fajan rule

Q.26 (i) Explain Dual behaviour of matter and Heisenberg uncertainty principle.

(ii) What do you mean by spectrum? Explain its types.

OR

(vii) Write the limitation of Bohr Model.

(viii) Explain the quantum numbers.

Best of Luck

Q.12 Calculate the wavelength, frequency and wave number of light wave whose period is 5.0×10^{-10} sec.

Q.13 Explain Ionization enthalpy, electrongain enthalpy, electrongativity .

Q.14 Write the postulates of kinetic molecular theory.

Q.15 (i) Define extensive and intensive properties.

(ii) Explain Hess's law with example.

Q.16 Find out the value of equilibrium constant for the following reaction at 298k $2NH_3 + CO_2 \rightarrow NH_2CONH_2 + H_2O$ $\Delta G^0 = -13.6 KJ / Mol$.

Q.17 Define – (i) syngas (ii) water gas (iii) fuel cell

Q.18 Explain why Beryllium show Anomalous behavior.

Q.19 Explain the reactivity of alkali metal with air, water, halogens.

Q.20 What happens when :

(i) Borax is heated strongly

(ii) Boric acid is added to water

(iii) BF$_3$ is reacted with ammonia

Q.21 (i) Define Nucleophile and Electrophile

(ii) Define homolytic and hetrolytic cleavge

Q.22 Write the combustion reaction of –

(i) Butane   (ii) Hexyne   (iii) Toluene

Q.23 Hybridisation is the intermixing of energy among two or more half filled or fully filled orbitals of comparable energy to form same number of hybrids. Hybrids have identical energies and similar shape. The tetrahedral structure involves Sp^3 hybridization, trigonal planar structure involves Sp^2 hybridization and linear structure involves Sp–hybridization. Greater is the S-character of the hybrid orbital, the smaller is its size.

(i) **What are the characteristics of Sp^3 hybridization**

(ii) **What are the characteristics of Sp^2 hybridization**

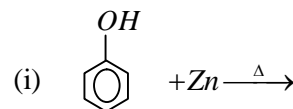**(iii)** **What are the characteristics of Sp– hybridization**

(iv) **What are the hybridization states of each carbon atom**
(a) $CH_3 - CH = CH_2$ (b) $CH_2 = C = O$

Q.24 Complete the reaction :

(i) $CH_3Br + 2Na + CH_3Br \xrightarrow{\text{Dry ether}}$

(ii) $CH_3 - CH = CH_2 + H_2 \xrightarrow{P+}$

(iii) $CH_3CH = CH_2 + O_3 \rightarrow$

(iv) $CH_3CH_2Br + KOH \xrightarrow{\text{alcohol}}$

(v) $CH - \underset{\underset{CH_3}{|}}{C} = CH_2 + H_2O \xrightarrow{H+}$

OR

(i) $\overset{OH}{\underset{}{\bigcirc}} + Zn \xrightarrow{\Delta}$

(ii) $\bigcirc + CH_3Cl \xrightarrow[AlCl_3]{Anhyd}$

(iii) $\bigcirc + 3H_2 \xrightarrow[\Delta]{Ni}$

(iv) $\bigcirc + 6Cl_2 \xrightarrow[Dark, Cold]{Anyd\ AlCl_3}$

(v) $\bigcirc \xrightarrow[ConcH_2SO_4\ \ 323K]{Conc.\ HNO_3}$
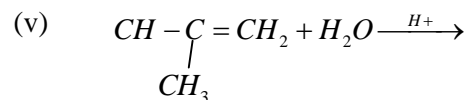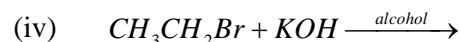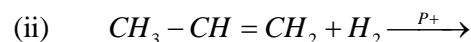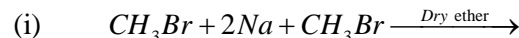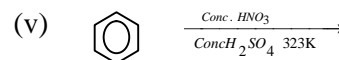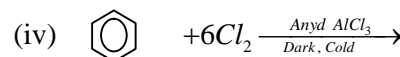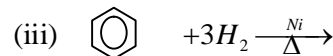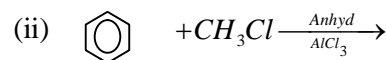
Roll. No. ☐   **Code No.** 11/Mathematics/NLCS/32

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs.   **M. M. 100**

General Instruction :

    (i)   All Questions are compulsory.

    (ii)   This Questions paper contain 29 Questions.

    (iii)   Questions 1 – 4 in Section A are very short Answer type Questions carrying One Mark each. Questions 5 – 12 in Section B are sort Answer type Questions carrying Two Marks each. Questions 13 – 23 in Section C are long Answer I type Questions carrying Four Marks each. Questions 24 – 29 in Section D are long Answer II type Questions carrying Six marks each.

Section - A

Q.1   Let A = { 1, 2 } and B { 3, 4 }. Find the number of relations from A to B.

Q.2   How many chords can be drawn through 15 points on a circle?

Q.3   Expand $\left(x^2 + \dfrac{3}{x} \right)^4$ using Binomial theorem.

Q.4   Write the slope of line $3x - 4y + 1 = 0$.

Section - B

Q.5   Let $\bigcup$ be the set of all triangles in a plane. If A is the set of all triangles with at least one angle different from 60°, what is A' ?

Q.6   Solve the trigonometric equation for general solution - $\tan^2 x + \cot^2 x = 2$.

Q.7   Simplify $z = \dfrac{(2+3i)^2}{1+i}$ and express result in $a + ib$ form.

Q.8   In how many ways 4 boys and 6 girls be seated in a line so that no two boys may sit together?

Q.9   In how many ways can 3 letters be posted in 4 letter boxes?

Q.10 Find the middle term in the expansion of $\left(x + \dfrac{1}{x} \right)^{10}$.

Q.11 Write the equation of line perpendicular to line $3x + 2y + 1 = 0$ and passing through point $A(-2, 3)$.

Q.12 Find the equation of a line whose slope is $\frac{3}{4}$ and y – intercept is -5.

Section - C

Q.13 180 students appeared in two papers in Mathematics. 148 students passed in paper I and 132 students passed in paper II. If 128 students passed in both, find the number of students who failed in both.

OR

Prove the following, using Laws of sets and not by using example.
$A-(B\cup C)=(A-B)\cap(A-C)$.

Q.14 Find the domain and range of $f(x)=\sqrt{16-x^2}$, here x is a real number.

Q.15 Prove that $\tan^2\left(\frac{\pi}{4}+\theta\right)=\frac{1+\sin 2\theta}{1-\sin 2\theta}$.

Q.16 Prove by using principle of Mathematical Induction :

$1^3+2^3+3^3+\ldots\ldots\ldots\ldots+n^3=\frac{n^2(n+1)^2}{4}$, here $n\in N$.

Q.17 If $z=\frac{1+\cos\theta+i\sin\theta}{1+\cos\theta-i\sin\theta}$, then prove that $|z|=1$.

OR

If $x+iy=\frac{a+ib}{c+id}$, then prove that $x^2+y^2=\frac{a^2+b^2}{c^2+d^2}$.

(You have to prove this by not using "Conjugate Method" or "Modulus Method".)

Q.18 A firm has 600 litres of a 12% solution of acid. How many litres of a 30% acid solution must be added to it so that acid content in the resulting mixture must be more than 15% but less than 18%?

Q.19 Prove that ${}^nC_r+{}^nC_{r-1}={}^{n+1}C_r$.

OR

There are 8 consonants and 6 vowels. How many words of 7 letters can be formed if they are to contain 4 consonants and 3 vowels?

Q.20 Prove that there is no term having x^4 in the expansion of $\left(\frac{x^2}{2}+\frac{1}{x}\right)^9$.

Q.21 Find three numbers in GP whose sum is 21 and whose product is 216.

Q.22 The first, second and the last terms of an AP are a, b, c respectively. Show that the sum of the AP is $S=\frac{(b+c-2a)(a+c)}{2(b-a)}$.

Q.23 Find the equation of the line passing through the point (1, 3) and making an angle of $45°$ with the line $x-3y+4=0$.

Section - D

Q.24 Prove that : $\tan A+\tan\left(\frac{\pi}{3}+A\right)+\tan\left(\frac{2\pi}{3}+A\right)=3\tan 3A$.

Q.25 Using PMI prove that : (Here $n\in N$)

$1^2+3^2+5^2+\ldots\ldots\ldots+(2n-1)^2=\frac{n(2n-1)(2n+1)}{3}$.

Q.26 Find the number of permutations that can be had from the letters of the word DAUGHTER :
(i) taking all the letters together
(ii) beginning with G.
(iii) H and E at the extreme (starting and ending) positions.
(iv) Vowels being always together.
(v) Consonants being always together.
(vi) T and R should be next to each other.

Q.27 If a and b are the roots of $x^2-3x+p=0$ and c and d are roots of $x^2-12x+q=0$ where a, b, c, d are in GP. Show that
$(q+p):(q-p)=17:15$.

OR

If a, b, c, x are all real and $(a^2+b^2)x^2-2b(a+c)x+b^2+c^2=0$ then show that a, b, c are in GP. Also find their common ratio.

Q.28 A line is such that its segment between the lines $5x-y+4=0$ and $3x+4y-4=0$ is bisected at the point (1, 5). Obtain its equation.

OR

If p and q are the length of perpendiculars from the origin to the lines $x\cos\theta-y\sin\theta=k\cos 2\theta$ and $x\sec\theta+y\cos ec\theta=k$ respectively.
Then prove that $p^2+4q^2=k^2$.

Q.29 Find the coefficient of a^4 in the product $(1+2a)^4(2-a)^5$, using binomial theorem.

Q.26 A bob of mass m is suspended by a light string of length ℓ. It is imparted a horizontal velocity v_0 at the lowest point A such that it completes a semi circular trajectory in the vertical plane with the string becoming slanck only on reaching the top most point C. Shown in figure obtain expression for v_0, v_B and v_C,
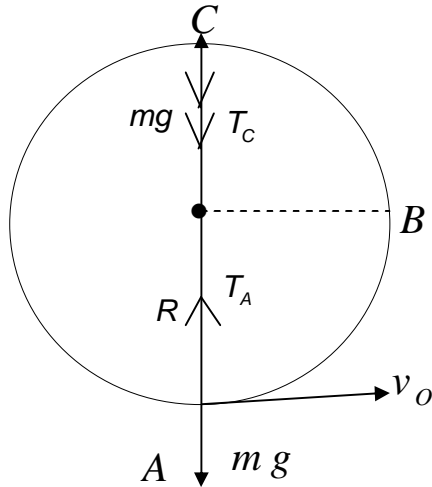
OR

Define satellite. Find expression for orbital velocity height of satellite, time period of satellite, Binding energy, total energy & escape velocity of satellite.

Best of Luck

Q.1   An arrow is shot from a bow. What is the source of energy?

Q.2   Why a spring balance show wrong measurement after long use?

Q.3   What is the time period of a simple pendulum of length 50cm placed in an artificial satellite?

Q.4   What is the condition for the following formula to be valid –

$$average\ velocity = \frac{initial\ velocity + final\ velocity}{2}.$$

Q.5   Why ice at 0°C is found to be colder than water at 0°C?

Q.6   There is a limit beyond which the polishing of the surface increase frictional resistance rather than decreasing it? Explain.

Q.7   State and prove work energy theorem for variable force.

Q.8   Two quantities A and B are measured as A=(1.0 ± 0.2)m and B=(2.0 ± 0.2)m . How will you represent the correct value for $\sqrt{AB}$.

Q.9   A structural steel rod has a radius of 10 mm and length of 1m. A 100 KN force F stretches it along its length. Calculate (a) the stress (b) elongations and (c) strain on the rod. Given that young modulus $Y = 2\times10^{11}$ N/m^2.

Q.10 Prove that torque $\tau = I\alpha$ where I is moment of inertia and α is angular acceleration.

Q.11 State all three Kepler's laws of planetary motion.

Q.12 State Zeroth Law of thermodynamics and explain it.

Q.13 State and prove Torricelli's theorems.

Q.14 Explain why an air bubble in water rises from bottom to top and grow in size.

Q.15 Derive an expression for the excess pressure inside a liquid drop.

Q.16 Define all three modes of heat transfer with a suitable example.

Q.17 In a test experiment on a model aeroplane in a wind tunnel, the flow speeds on the upper and lower surfaces of the wing are 70m/s and 63 m/s respectively. What is the lift of the wing if its area is 2.5 m^2? Density of air=1.3kg/ m^3.

Q.18 Find moment of inertia of a ring about axis of rotation.

Q.19 State and prove conservation of mechanical energy with freely falling body.

Q.20 Write the dimension formula for following physical quantities –
 (i) Young Modulus (ii) viscosity (iii) Reyonelds number (iv) work
(v) Force (vi) Radius of gyration.

Q.21 Find variation of g with height and depth.

Q.22 Define Magnus effect.

Q.23 The elastic behaiour of solids can be explained by considering the microscopic nature of solid. Here, the atoms or molecules are regarded as bounded by interatomic or intermolecular forces. When external deforming force is applied. The atoms or molecules get displaced from the position of stable equilibrium. They have tendency to come back to the original position giving rise to restoring forces. The deforming force may cause change in length or volume or shape or combination of these. The elastic property of a body is measured numerically by modulus of elasticity or coefficient of elasticity.
Answer the following Questions :
(i)   A wire is cut into two equal parts. How does this affect Young's modulus of wire?
(ii)   What is the effect of temperature on modulus of elasticity of solids?
(iii) Write an expression for elastic potential energy stored in a deformed wire.
(iv)   Define poison's ratio.

Q.24 Prove that the sum of static pressure and dynamic pressure is always constant.

OR

State and prove Bernouli's theorem for ideal liquid.

Q.25 (i)   Define elastic collision between two bodies.

(ii)   Prove that in case of perfectly elastic collision of two body of equal mass after collision both bodies interchange their velocities.

OR

(i)   Define projectile motion. Find expression for (a) path of projectile (b) max height of projectile (c) time of flight (d) range of principle

(ii)   The position of particle is given by - $\vec{r} = 3t\hat{i} - 2t^2\hat{j} + 4\hat{k}m$ find velocity and acceleration at $t = 2\sec$.

Roll. No. ▢   Code No. 11/Physical Ed./NLCS/57

Half Yearly Examination 2016 – 17

Time: 3:00 Hrs.   **M. M. 70**

Q.1   When was established Netaji Subhash National Institute of sports? 1
Q.2   What is meaning of 'Life Style'?   1
Q.3   What do you mean by 'IPC'?   1
Q.4   What are BMI category of over weight?   1
Q.5   Define doping.   1
Q.6   What is flexibility?   1
Q.7   What is 'Test'?   1
Q.8   What do you mean by human anatomy?   1
Q.9   What are the full-form of following sentences?   2
      (i) C.P.Ed.   (ii) D.P.Ed.
Q.10 What is strength and write parts of strengths?   2
Q.11 Write a short note on the Olympic Awards.   2
Q.12 Write about 'Pranayama'.   2
Q.13 What do you mean by 'Gene Doping'?   2
Q.14 Write the names of the types of Physical Activity.   2
Q.15 What is calculation formula of BMI and Waist-Hip Ratio?   2
Q.16 What are properties of muscles?   2
Q.17 What are the main objectives of Physical Education?   3
Q.18 Explain the three components of Positive Life Style.   3
Q.19 Discuss about any three Sports Awards.   3
Q.20 Explain the classification of Asanas.   3
Q.21 Write the any six name of performance Enhancing Substances.   3
Q.22 Discuss about components of Health Related Fitness.   3
Q.23 Write the Body Types classification of Hippocrates.   3
Q.24 Discuss about Respiratory Systems.   5
Q.25 What are the Importance of Test and measurement in sports? Write
      any five factors.   5
Q.26 Explain any five principles of Physical Activity Environment. 5
Q.27 Write the Elements of 'YOGA'.   5
Q.28 Write about Doping control procedures.   5

Best of Luck