Pre Board Examination 2014 – 15

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

General Instructions:

Section A Reading : 30 marks

Section B Writing : 30 marks

Section C Literature & Long Reading Text : 40 marks

Section – A (Reading)

Q.1   Read the following passage carefully and answer the questions that follow:-

1. An urgent problem is now threatening libraries throughout the world. Their collections, which are crucial for diverse purposes as economic development, educational research and recreational pursuits, are in danger of disintegrating .

2. The problem is mainly due to one cause- the type of paper on which books have been printed for the past one and a half centuries. Until the 1850s, paper was produced from linen or cotton rags and proved to be relatively long-lasting. In the mid-19th century, however, the popular demand for paper and the commercial need for and economic method of production led to the use of mechanically ground wood pulp. Paper manufactured from wood pulp is highly acidic and therefore, inherently unstable. It contains lignin, a major factor in causing paper to discolour and disintegrate. The useful lifespan of most 20th century book papers has been estimated to be no more than a few decades.

3. 3)Libraries comprise an important part of the market for printed books and they are increasingly aware of the fragility of this material. The extent of the deterioration of library collections is alarming. Surveys conducted at various major institutions reveal that 26-40% of the books they hold are seriously embrittled and thus unavailable for normal use.

4. Programmes are now being developed with two main aims in mind: on the one hand, to improve the physical condition of library collection, especially by the process called 'mass deacidification (which is designed to eliminate acid from the paper of published books and insert a buffer compound that will provide protection against future acid attack from the environment) and on the other, to transfer the contents of the existing books to another medium (such as microfilm or optical disk).

5. Libraries will only be carry out these special tasks with the assistance of other experts such as book conservators and high technology specialists. But, there is another group with whom I have traditionally enjoyed strong affinities and whose cooperation will be crucial, if the problem of decaying collections is to be arrested: the printing and publishing industries. The existing problem, which of book collections already assembled in libraries, is of vast proportions. It is intensified by the continuing use of acid-based paper in book publishing. The key issue is, how to preserve the books of the future, not simply those of the past.

6. Libraries are of critical importance to the well being of citizens, since they provide the knowledge base of the society. They contain the record of humanity, the accumulation of ideas and insights and discoveries on which social effort and progress are possible. The destruction of libraries would represent an immense cultural loss, a form of amnesia, which would affect every member of society.

7. Printers and publishers have an economic interest in turning to paper of archival quality. So long as libraries are acquiring books with a short lifespan, they will be forced to devote an increasing share of their budgets to conservation.

Q.1.1 Choose the most appropriate options from those given below: 3×1=3
(a) Paper manufactured from this is basically unbalanced:
     (i) linen   (ii) cotton rags (iii) wood pulp (iv) lignin
(b) This would affect the society
     (i) the loss of books   (ii) printers and publishers
     (iii) the loss of libraries   (iv) optical disk
(c)Programme to improve the condition of libraries:
     (i) preserve books of future   (ii) remove acid from paper
     (iii) economic interest   (iv) experts assistance

Q.1.2 On the basis of your reading of he passage, answer the following questions briefly: 6×1=6
(a) Why are the collections in libraries in danger of disintegration?
(b) Why was wood pulp developed as a raw material for paper?
(c) Until the 1850s, what was used to keep the paper long lasting?
(d) What leads to discolouration and disintegration of paper?
(e) How are libraries important for mankind?
(f) What measures can improve the conditions of library?

Q.1.3 Find words from the passage with similar meanings: (i) great (para 6)   (ii) vital (para 5)   2×1=2

Q.2 Read the following passage carefully and answer the questions that follow

1. As is well known and has often been described, the machine industry of recent times took its rise by a gradual emergence out of handicrafts in England in the eighteenth century. Since then the mechanical industry has progressively been getting the upper hand in all the civilized nations, in much the same degree in which these nations have come to be counted as civilized. This mechanical industry now stands dominant at the apex of the industrial system.

2. The state of the industrial arts, as it runs on the lines of the mechanical industry, is a technology of Physics and Chemistry. That is to say, it is governed by the same logic as the scientific laboratories. The procedures, principles, habits of thought, preconceptions, units of measurement and of valuation are the same in both cases.

3. The technology of Physics and Chemistry is not derived from established law and custom, and it goes on its way with as nearly complete a disregard of the spiritual truths of law and custom as the circumstances will permit. The realities with which this technology is occupied are of another order of actuality, lying together within the three dimensions that contain the material universe, and running altogether on the logic of material fact. In effect it is the logic of inanimate facts.

4. The mechanical industry makes use of the same range of facts handled in the same impersonal way and directed to the same manner of objective results. In both cases alike it is of the first importance to eliminate the 'personal equation', to let the work go forward and let the forces at work take effect quite objectively, without hindrance or deflection for any personal end, interest or gain. It is the technician's place in industry, as it is the scientist's place in the laboratory, to serve as an intellectual embodiment of the forces at work, isolate the forces engaged from all extraneous disturbances, and let them take full effect along the lines of designed work. The technician is an active or creative factor in the case only in the sense that he is the keeper of the logic which governs the forces at work.

5. These forces that are brought to bear in mechanical industry are of an objective, impersonal, unconventional nature, of course. They are of the nature of opaque fact. Pecuniary gain is not one of

these impersonal facts. Any consideration of pecuniary gain that may be injected into the technician's working plans will come into the case as an intrusive and alien factor, whose sole effect is to deflect, retard, derange and curtail the work in hand. At the same time, considerations of pecuniary gain are the only agency brought into the case by the businessmen, and the only ground on which they exercise a control of production.

Q.2.1 Choose the most appropriate options from those given below: 3×1=3
   1) The mechanical industry is:
        i)leading   ii)lagging   iii)competing   iv)supporting
   2) The industry runs on same grounds as:
        i)principles   ii)Physics and Chemistry   iii)laboratories   iv) procedures
   3) The guardian of logic is:
        i) scientist   ii)industrialist   iii)technician   iv)businessmen

Q.2.2 On the basis of your reading of the passage, answer the following questions briefly: 6×1=6
   (i) Businessmen are mainly responsible for?
   (ii) How does the industrial system evolved?
   (iii) What is the first importance in the mechanical industry?
   (iv)What are the duties of a technician?
   (v) What is the author primarily concerned with?
   (vi) What does the emergence of a mechanical industry symbolize?

Q.2.3 Find word from the passage with opposite meanings: i)extend (para 5)   ii)base (para 1) 2×1=2

Q.3   Read the following passage and answer the questions that follow:-

With society changing at a constant speed, one thing remains steady: our need and desire to learn. Although, the classroom is viewed as a traditional setting for learning, it too is changing and evolving at lightning speed. With a growing population, continual technology advances and the constant demand for a valuable education, these institutions must continue to provide the materials to meet these changes. It is quickly becoming an integral part of the learning experience at all levels of higher education. Distance education has traditionally been referred to as correspondence, whereby the student completes the course by mail from another town or city other than that in which the school is located. The student is supplied with the necessary materials --- books, tapes or videos and it is up to them to complete assignments by the deadline.

The appeal of distance education is that the students are allowed to complete the course at their own pace on their own schedule. The student has the choice of completing a few courses, perhaps out of interest or as a stepping stone for their career. The newest trend to hit the distance education scene is the virtual classroom or distance online. This has opened up a whole new world of opportunities for students.

Many schools are now offering distance education courses online with students receiving all course materials and grades as well as handing in assignments, communicating with professors/instructors or chatting with fellow students over the internet. It is also easier for students to access their instructors for clarification about assignments, grades or questions about their courses. From an international perspective, distance education online now gives pupils a chance to easily study at school in other countries.

A few tips to think about before pursuing distance education: Students should be self-disciplined and motivated and should make sure they have the available time during the week to complete the work.

Research your institution before enrolling, make sure it is accredited, so you know your certificate, diploma or degree will be recognized upon completion. If you are taking this programme as a requirement for a job, make sure your current or potential place of employment will recognize your certificate upon completion. Ask others who have already taken your course or another programme form the same institution about their experience with the programme or school. Ask yourself what level of involvement you would like from your instructor or other students.

Q.3.1 On the basis of your reading of the above passage, make notes using headings and sub-headings. Use recognizable abbreviations and supply an appropriate title to it. 5

Q.3.2 Write an abstract of the above passage. 3

Section B – Writing

Q.4 You have cleared the IIT-JEE Exam with your name in top ten merit list. You want to celebrate the occasion by hosting a party to your friends and relatives . Draft an informal invitation.(50 words) 4

Q.5 Write a letter to the editor of a national daily emphasizing the need of educational counselors for guidance to the students in each school. You are Vishal/Jyoti, 51 Vivekanand Colony, Delhi. 6

Q.6 Ambition and Career are different from hobbies. A student should be dedicated towards his/her goal. Write a speech to be delivered in the morning assembly.(150-200 words) 10

Q.7 Write an article on the topic 'Self-Introspection in Student's life' to be published in the school magazine. You are the magazine secretary of your school.(150-200 words) 10

SECTION ---C LITERATURE & LONG READING TEXT

Q.8 Read the extract and answer the questions: 4×1=4

And such too is the grandeur of the dooms
We have imagined for the mighty dead;
All lovely tales that we have heard or read;
An endless fountain of immortal drink,
Pouring unto us from the heaven's brink.

i)Explain 'the grandeur of the dooms'.
ii)Who are the mighty dead?
iii)What contrast of life has been mentioned here?
iv)What sorts of ambrosia the poet discuss here?

Q.9 Answer the following questions in 30-40 words: 3×4=12

(i) Why did Gandhi protest against the delay in the trial? What was the outcome of Gandhi's refusal to furnish bail?

(ii) Why did Sophie not want Jansie to know anything about her meeting with Danny Casey?

(iii) Why was Dr Sadao not sent to the battlefield? Why did the messenger come to him?

(iv) Why does Jack insist that it was the wizard that was hit and not the mother? What is the moral that the story rises?

Q.10 Though both Mr Lamb and Derry suffer form a physical disability their attitude to life is very different. Justify the statement with reference to the story 'On the Face of It'. 6

Q.11 Describe how the story, 'The Rattrap' shows that basic human goodness can be brought out by understanding and love. 6

Q.12 Describe the struggle at the Jolly Cricketers. 6

Q.13 The mariner started talking to Mr Marvel in spite of his shabby appearance. Attempt a character sketch of the mariner. 6

** ALL THE BEST **

Pre Board Examination 2014 – 15

Time: 3:00 Hrs.   **M. M. 80**

Q.1   Interest payable on capitals of the partners is charged to…   1
(a) Profit and Loss account   (b) Profit and loss appropriation account
(c)Realization account   (d)Profit and loss adjustment account

Q.2   A change in the profit sharing ratio of the existing partner results in :   1
(a) Reconstitution of a partnership firm   (b) Dissolution of a firm
(c) Dissolution of partnership   (d) None of the above

Q.3   When shares are forfeited , share capital account is debited with :   1
(a) Nominal value of shares   (b) Called up value of shares
(c) Paid up value of shares   (d) Market value of shares

Q.4   If a share of ì 10 issued at a premium of ì 2 on which the full amount has been called and ì 8
(including premium) paid is forfeited , the share capital account will be forfeited with :   1
(a) ì 12   (b) ì 10   (c) ì 8   (d) ì 6

Q.5   Which companies are exempted from the obligation of creating Debenture Redemption Reserve
by the SEBI?   1
(a)FMCG Companies   (b) Non – listed companies
(c) Infrastructural companies   (d) Mid cap companies

Q.6   A Ltd purchased machinery worth ì 7,00,000 firm B Ltd on first April 2013. ì 1,00,000 were paid
to B Ltd immediately and the balance was paid by issue of 10% debentures of ì 6,20,000 in A
Ltd. Pass the necessary journal entries for recording the transaction in the books of A Ltd.   3

Q.7   Z Ltd had ì 40,00,000, 8% debentures due to be redeemed out of profits on 1_{st} Oct 2013 at a
premium of 5%. The company had a debenture redemption reserve of ì 13,70,000. Pass the
necessary journal entries at the time of redemption.   3

Q.8   A, B and C were partners in a firm sharing profits in the ratio of 1 : 3 : 2. They decided that with
effect from 1st January 2013, they will share profits in the ratio of 4 : 6 : 5. For this purpose the
goodwill of the firm is valued at the total of preceding three year's profits. The profits were :
2008- ì 40,000, 2009 - ì 10,000 (Loss), 2010- ì 80,000 (Loss), 2011- ì. 1,20,000 2012-
ì 1,40,000
Reserves and profits appear in the balance sheet at ì 40,000 and ì 30,000 respectively. Partners
neither want to show goodwill in the books nor want to distribute the reserves and profits
appearing in the balance sheet. Pass a single journal entry to record the change.   3

Q.9   A,B,C,D are partners sharing profits and losses in 2:2:3:3 respectively. After the accounts of the
year had been closed it was found that interest on drawings @ 6% per annum has not been
taken into consideration. The drawings of the partners were ; A ì 20,000; B ì 24,000; C ì 32,000
and D ì 44,000. Give the necessary journal entry.   4

Q.10 (a) A company purchased assets of the book value of ì 12,00,000 and Liabilities of ì 2,20,000 of
another Company for a purchase consideration of ì 9,40,000. The purchase consideration was
discharged by the issue of equity shares of ì 50 each at a discount of 6%.Pass journal entries in
the books for purchasing company.
(b) X Ltd provided ì 2,00,000 for plantation of trees in and around its factory premises.
State the value involved in such decision.   4

Q.11 Anita and Tina are partners sharing profits as 9 : 5. They agree to admit Riyaz their manager into
partnership, who is to get 1/8 share in the profits. He acquires this share as 1/12 from Anita and
1/24 from Tina.
You are required to :
(i) Calculate the new profit sharing ratio.
(ii) Indicate the value in taking Riyaz as a partner.   4

Q.12 A and B are partners with capitals of ì 3,00,000 and 2,00,000 respectively sharing profits in the ratio of 7 : 3. During the year ended 31st March 2013, they earned a profit of ì 2,26,440 before allowing interest on partner's loan. The terms of partnership are as follows :
(i) Interest on Capital is to be allowed @ 7% p.a.
(ii) A to get a salary of ì 25,000 per annum.
(iii) Interest on B's Loan account of ì 80,000 for the whole year.
(iv) Interest on drawings of partners at 8% per annum. Drawings for A ì 36,000 and B ì 48,000.
(v) 1/10th of the distributable profit should be transferred to General Reserve.
Prepare the profit and Loss Appropriation Account.   6

Q.13 A, B and C are partners sharing profits and losses in the ratio of 5 : 3 : 2. Their Balance Sheet as at 31st March, 2013 was as follows. :   6

Liabilities	ì	Amount	ì
Sundry Creditors	29,000	Goodwill	24,000
Provision for Doubtful Debts	5,000	Debtors	80,000
Capitals :		Investments	30,000
A	1,40,000	Land & Building	1,42,000
B	90,000	Machinery	50,000
C	76,000	Patents	4,000
		Cash at Bank	10,000
Total	**3,40,000**	**Total**	**3,40,000**

C retired on the above date as per the following conditions:
(i) Goodwill of the firm is to be valued at three years purchase of the average profits of the last five years which were ì 20,000; ì 12,000; ì 30,000; ì 6,000 (loss) and ì 34,000 respectively.
(ii) Machinery is to be reduced to ì 40,000 and patents are valueless.
(iii) There is no need of any provision for doubtful debts
(iv) An unclaimed liability of ì 2,000 is to be written off.
(v) Out of the total insurance premium paid, ì 1,000 be treated as prepaid.
(vi) Investment are revalued at ì 16,000 and these are taken by C at this value.
Entire sum payable to C is to be brought in by A and B in such a way so as to make their capitals proportionate to their new profit sharing ratio which is 3:2.
Prepare revaluation account and Capital Accounts.

Q.14 *M, N* and *O* were partners in a firm sharing profits and losses equally. Their Balance sheet as at 31.12.2012 was as follows.   6

Liabilities	ì	Amount	ì
Capitals :		Plant & Machinery	60,000
M 70,000		Stock	30,000
N 70,000		Sundry Debtors	95,000
O 70,000	2,10,000	Cash at Bank	40,000
General Reserve	30,000	Cash in Hand	35,000
Creditors	20,000		
	2,60,000		2,60,000

N died on 14th March, 2013. According to the Partnership Deed, executors of N entitled to :
(i) Balance of Partner's capital account.
(ii) Interest on Capital @ 5% p.a.
(iii) Share of goodwill calculated on the basis of twice the average of past three year's profits and
(iv) Share of profits from the closure of the last accounting year till the date of death on the basis of twice the average of three completed year's profits before death.
Profits for 2009, 2010 and 2011 were ì 60,000, ì 90,000 and ì 1,20,000 respectively.
Show the working for deceased partner's share of goodwill and profits till the date of his death. Pass the necessary journal entries and prepare *N's* Capital Account to be rendered to his executors.

Q.15 Geeta Ltd issued 50,000 shares of ₹ 10 each payable ₹ 3 on application , ₹ 4 on allotment, ₹ 2 on first call and balance on final call. In all 60,000 application were received. Allotment was done as follows:

i) to applicants for 10,000 shares-in full
ii) to applicants for 20,000 shares-15,000 shares
iii) to applicants for 30,000 shares- 25,000 shares

Every share holder paid the money as and when due , except Sohan who applied for 2000 shares; out of the group applying for 20,000 shares did not paid allotment, first and final call money. His shares were forfeited .1000 of the forfeited shares were reissued for Rs.8 per share as fully paid up .Give Journal Entries.

The directors made full allotment to some and pro rata allotment to the rest .Which values are highlighted through it?

OR

K limited has been registered with an authorized capital of ₹ 2,00,000 divided into 2,000 shares of ₹ 100 each of which 1,000 shares were offered for public subscription at a premium of ₹ 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 ₹ 60 per share, ₹ 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

Q.16 *P* and *Q* are partners sharing profits in 3 : 1. *R* is admitted and the partners decide to share the future profits in the ratio of 2 : 1 : 1. The Balance sheet of *P* and *Q* as at 31st March, 2013 was as under :

Liabilities	₹	Amount	₹
Creditors	30,000	Bank	15,000
Profit & Loss Account	60,000	Debtors	60,000
Capital A/c :		Stock	1,50,000
P 3,50,000		Prepaid Expenses	20,000
Q 2,20,000	5,70,000	Plant & Machinery	1,40,000
		Premises	2,75,000
	6,60,000		**6,60,000**

It was decided that :
(i) Part of stock which has been included at a cost of ₹ 8,000 had been badly damaged in storage and could realize only ₹ 2,000.
(ii) A bill for ₹ 7,000 for electric charges has been omitted to be recorded.
(iii) Plant and Machinery was found overvalued by ₹ 20,000. Premises be appreciated to ₹ 3,00,000.
(iv) Prepaid expenses be brought down to 40%.
(v) *R's* share of goodwill is valued at ₹ 20,000 but he is unable to bring it in cash.
(vi) *R* brings in capital proportionate to his share of profit in the firm.
Prepare Revaluation A/c, Capital A/c, and the opening Balance Sheet.

OR

The following is the Balance Sheet of A and B on 31st December 2010:

Liabilities	ì	Assets	ì
Sundry Creditors	30,000	Cash in Hand	500
Bills Payable	8,000	Cash at Bank	8,000
Mrs. A's Loan	5,000	Stock- in- Trade	5,000
Mrs. B's Loan	10,000	Investment	10,000
General Reserve	10,000	Debtors 20,000	
Outstanding Salaries	1,000	Less : Provision 2,000	18,000
Capital Accounts :		Plant	20,000
A 10,000		Buildings	15,000
B 10,000	20,000	Goodwill	4,000
		Profit and Loss A/c	3,500
Total	84,000	Total	84,000

In spite of repeated reminders by the authorities, they kept dumping hazardous material into a nearby river. The Court ordered for the dissolution of their partnership firm on 31st December, 2010.

Partners were agreed for the following terms:
(a) A promised to pay off Mrs. A's loan and took away stock-in-trade at ì 4,000.
(b) B took away half the investment at 10% Discount.
(c) Debtors realized ì 19,000.
(d) Creditors and Bills payable were due, on an average basis, on month after 31st December, but they were paid immediately on 31st December, at a discount of 6% per annum.
(e) Plant realized ì 25,000; Building ì 40,000, Goodwill ì 6,000 and remaining investments at ì 4,500.
(f) There was an old typewriter in the firm which had been written off completely from the books of the firm. It was not estimated to realize ì 300. It was taken away by B at this estimated price.
(g) Realization expenses were ì 1,000.
  Prepare necessary accounts to close the books of the firm and also identify the Values violated by the partners.   8

PART-B
Q.17 State one transactions which results in flow of cash.   1
  (a) cash received from debtors   (b) issue of bonus shares
  (c) purchase of machinery on credit   (d) purchase of stock for cash
Q.18 X Ltd has a Debt equity ratio at 3:1; the management wants to maintain it at 1:1.What are the two choices to do so.   1
  (a) redemption of debentures   (b) issue of bonus shares
  (c) declaring dividends   (d) buy- back of shares
Q.19 Payment of dividend by a non financing company will come under which of the following activity 1
  (a) Operating activity   (b) Financing Activity
  (c) Investing activity   (d) None of these
Q.20 From the following information, prepare Comparative Statement of Profit & Loss: 3

Particulars	2012	2013
Revenue from Operations	500% of other income	500% of other income
Other income	40,000	50,000
Cost of Material Consumed	60% of Revenue from operations	50% of Revenue from operations
Other Expenses	2 ½ % of Cost of Material Consumed	2 ½ % of Cost of Material Consumed
Tax	30%	30%

Q.21 (a) Current Ratio of a company is 4:3, working capital is ì 80000.Calculate the amount of current assets and current liabilities

(b) Net Credit Sales of Vinod Limited during the year were ì 4,50,000. If Debtors Turnover Ratio Is 4 Times, calculate the debtors in the beginning and at the end of the year. you are informed that closing debtors are two times in comparison to opening debtors.   4

Q.22 (a) Mention any two Contingent Liabilities of a Company.   4

(b) List two items shown under non-current liabilities of a company.

Q.23 Prepare a Cash Flow Statement from following Balance Sheets of Ranjan Ltd.   6

Particulars	2010 (ì)	2011 (ì)
I. EQUITY AND LIABILITIES		
1. Shareholders Funds		
Share Capital	300000	400000
Reserve and Surplus		
Profit & Loss Account	35000	105000
Security Premium	50000	5000
2. Non Current Liabilities		
9% Debenture	50000	75000
3. Current Liabilities		
Trade payable (Creditors)		
Creditors	310000	235000
Bills payable	50000	85000
Short term provision		
Provision For Dividend	125000	170000
Total	**920000**	**1075000**
II ASSETS		
1.Non-Current-Assets		
(a) Fixed Assets (Tangible)	320000	485000
(Intangible)	80000	65000
2.Current Assets		
Trade receivable: Debtors	200000	217000
Bills Receivable	210000	190000
Stock	80000	110000
Cash & Cash Equivalents	30000	8000
Total	**920000**	**1075000**

Additional Information's—

(i) Security premium ì 50000 used for issue of bonus shares.

(ii) Depreciation charged on Fixed Assets was ì 70000

(iii) 9% Debenture issued during the year for purchase of plant and machinery at the end of the year ì 25000

(iv) Dividend paid during the year ì 210000

** ALL THE BEST **

Pre Board Examination 2014 – 15

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

Q.1   (a) What is the benefit of using default parameter/ argument in a function? Give a suitable example to illustrate it using C++ code?   2

(b) Observe the following C++ code and write the name (S) of the header file (S), which will be essentially required to run it in a C++ compiler

```
Void main()
{       float Area, side ;
        cin >> Area ;
        side = sqrt (Area);
    cout<< "oneside of the square; "<<side
    <<endl;   }
```
                                                                              1

(c) Observe the following C++ code carefully and rewrite the same after removing al the syntax error (S) present in the code ensure that you underline each correction in the code.

        Important Note :

→ All the desired header files are already included, which are required to run the code.

→ correction should not change the logic of the program

```
# define change (A,B) 2✶ A + B ;
void main ( )
{     float X,Y.F ;
      cin >> x >> y;
            F = change [ X,Y ] ;
      Cout << "Result z; " << F < endline;
}
```
                                                                              2

(d) Observe the following C++ code carefully and obtain the output, which will appear on the serene after execution of it.

Important Notes :

All the desired header files are already included in the code, which are required to run the code.

```
void main ( )
{     char ✶ text = "AJANTA"
      int ✶ P, NUM [ ] = { 1, 5, 7, 9 };
      cout << ✶P << Text << endl ;
      Text ++
      P ++ ;
      cout << ✶ P << Text << endl ;
}
```
                                                                              2

(e) Observe the following C ++ code carefully and obtain the output which will appear on the serene after execution of it :-

```
# include < iostream.h>
class Mausam
{    int City, Temp, Humidity ;
     public :
     Mausam (int C=1)
{    City = C ; Temp = 10 ; Humidity = 63 ; }
     void sun (int T)
{    Temp + = T ; }
     void rain ( int H 0
{    Humidity + = H ; }
     void checkout ( )
{    cout << city << ":" << Temp << " &" << Humidity << "% " << endl ; }
```

```
} ;
    void main ( )
{   Mausam M, N (2);
    M. Sun (5);
    M. checkout ( );
    N. Rain (10);
    N. Sun (2);
    N. checkout ( );
    M. Rain (15);
    M. checkout ( );
}
```
                                                                                    3

(f) Based on the following C++ code, find the expected correct output (S) from the options (i) to (iv)
    Also, find out the minimum and maximum value can be assigned to the variable guess used in the
    code at the time when value of turn is 3.

```
    void main ( )
{   char Result [ ] [ 10 ] = { "GOLD", "SILVER", "BRONZE"} ;
    int Getit = 9, Guess;
    for (int Turn = 1; Turn <4; Turn ++)
{   Guess = random (Turn);
    cout ≪ Getit – Guess <<Result [ Guess ]<< "     " ; }}
```
Options:-
        (i)   9 GOLD ✶ 9 GOLD ✶ 8 SILVER ✶
        (ii)   9 GOLD ✶ 7 BRONZE ✶ 8 GOLD ✶
        (iii)   9 GOLD ✶ 8 SILVER ✶ 9GOLD ✶
        (iv)   9 GOLD ✶ 8 SILVER ✶ 8 GOLD ✶   2

Q.2 (i) What do you understand by static data members of a class. Also give a suitable C++ code to illustrate
     these variable.   2

    (ii) Answer the questions (i) and (ii) after going through the following class :

```
     class Tour
    {   int Locationcode; char Location [ 20 ];
        float charges;
        public :
        Tour ( )                              // functional 1
    {   Locationcode = 1 ;
        strcpy ( Location, "PURI") ; charges = 1200; }
        void Tourplan (float C)               // functional 2
        cout << Locationcode << " : " << Locationa <<  " : " << charges << endl ;
        Charges + = 100;
    }
        Tour (int LC, char L[ ], float c )    // functional 3
    {   Locationcode = LC;
        strcpy (location, L);
        charges = C ; }
     ~Tour ( )                                // functional 4
    {   cout << "Tour plan cancelled " << endl ; }
    } ;
```
      (a) In object oriented programming what are function 1 and function 3 combined together referred to as:
      (b) In object oriented programming which concept is illustrated by function 4?
         When is this function called / inwoked.   2

(iii) Define a class SUPPLY in C++ with the following description :-
Private members :
→ code of type int
→ food name of type string
→ sticker of type string
→ food type of type string
→ A member function get type ( ) to assign the following values for food type as per the given sticker

Sticker	Food type
GREEN	Vegetarian
YELLOW	contains Egg
RED	Non-Vegetarian

Public members :-
→ A function food In ( ) to allow user to enter values for code, Food Name , sticker and call function get type ( ) to assign respective food type.
→ A function Food out ( ) to allow user to view the content of all the data members.   4

(iv) Answer the questions (i) to (iv) based on the following :-

```
    class ORGANIZATION
{   char Address [ 20 ] ;
    double Budget, Income ;
    protected :
    void computer ( ) ;
    public :
            ORGANIZATION ( ) ;
    void Get ( ) ;
    void Show ( ) ;
} ;
    class WORKAREA : public ORGANIZATION
{   char Address [ 20 ] ;
    int Staff ;
    protected :
    double pay ;
    void calculate ( ) ;
    public :
            WORKAREA ( ) ;
            void Enter ( ) ;
            void display ( );
} ;
    class SHOWROOM : private ORGANIZATION
{   char Address [ 20 ] ;
            float Area ;
            double sale ;
    public :
            SHOWROOM ( ) ;
            void Enter ( ) ;
            void Show ( ) ;
} ;
```

(i)   Name the type of inheritance illustrated in the above C++ code.
(ii) Write the name of data members, which are accessible from member functions of class SHOWROOM.
(iii) Write the names of all the member functions, which are accessible from objects belonging to class WORKAREA.
(iv) Write the names of all members, which are accessible from objects of class SHOWROOM.   4

Q.3   (a) Suppose A, B, C are array of size, m, n, m+n respectively. Array A is stored in ascending order, B is in descending order. WAP to produce a third array C, containing all the data of array A and B in descending order.   3

       (b) An array Array [20] [15] is stored in the memory along with the column, each element occupying 8 bytes of memory, find out the Base Address and address of element Array [2] [3], if the element Array [4] [5] is stored at the address 1000.   3

       (c) Write a function in C++ to insert an element into a dynamic allocated oueue where each node contains a name (of type string) as data. Assume the following definition of THENODE for the same.

       Struct THENODE
       {   char Name [20] ;
               THENODE ✳ link ;   } ;   4

       (d) Write a function SKIPEACH(int HC [3], int c, int R) in C++ to display all alternate element from two dimensional array H (starting H [0] [0]).   2

       For example ;
       If the array is containing :

12	45	67
33	90	76
21	43	59

       The output will be

12	67	90	21	59

   (e) Evaluate the following POSTFIX notation. Show status of stock after every step of evaluation (i.e. after each operation :

       False, Not, True, AND, TRUE, False, OR, AND   2

Q.4 (a) Observe the program segment given below carefully and the questions that follow :

```
               class Inventory
       {       int Ano, qty ; char Articale [ 20 ] ;
               public :
                       void Input ( ) { cin >> Ano; gets (Article ) ; cin >> oty ; }
                       void Issue ( int Q ) { qty+- = Q : }
                       void procure(int Q){qty-=Q;}
               int GetAno ( ) { return Ano ; }
       } ;
                       void procureArticle (int TANO, int Tqty)
       {       fstream File ;
               File. Open ("Stock. Dat",ios : : binary| ios : : in|ios : : out ) ;
                       inventory I ;
                       int found = 0 ;
               while (found = = 0 &&File. Read ((char✳ ) & I, sizeof (I)))
       {       if (TAno = = I. GetAno ( ) )
       {       I. Procure ( Tqty) ;
                       _____ ; //statement 1
                       _____ ; //statement 2
               Found ++ ;            }
       {
               If (found = = 1 )
               cout << "procurement update" <<endl;
               else
               cout << "ubong Article no" << endl;
               File close ( ) ;
       }
```

(i) Write statement 1 to position the file pointer to the appropriate place, so that the data updation is done for the required Aritcle.

(ii) Write statement 2 to perform the write operation so that the updation is done in the binary file. 1

(b) Write a function in C++ to read the content of a text file "Place. Txt",and display the lines on screen which are either starting with 'p' or starting with 'S'. 2

(c) Write a function in C++ to search for the details (Number and Calls) of those Mobile phones, which have more than 1000 calls from a binary file "mobile. Dat". Assuming that this binary file contains records / objects of class Mobile which is defined below.

```
        class mobile
{       char Number [ 10 ] ;
                int calls ;
        public :
                void Enter ( ) ; { gets ( Number ) ; cin >>calls ; }
                void Billing ( ) { cout << Number << " # " << calls << endl;}
        int getcalls ( ) { return calls ; }  } ;
```
3

Q.5 (a) Explain the concept of candidate key with the help of an appropriate example. 2

(b) Write SQL quaries for (1) to (4) and write outputs for the SQL quaries mentioned in (a) to (d) parts on the basis of tables PRODUCTS and SUPPLIERS.

Table PRODUCTS

Pin	Pname	Qty	Price	Company	Supcode
101	Digital camera 14×	120	12000	Renix	S01
102	Digital Pad 11 i	100	22000	Digi Pop	S02
104	Pen drive 16GB	500	1100	Storeking	S01
106	Led Screen 32	70	28000	Dispexperts	S02
105	Car GPS System	60	12000	Moneon	S03

Table : SUPLIERS

Supcode	Sname	City
S01	Get all inc	Kolkata
S03	Easy Market Corp.	Delhi
S02	Digi busy group	Chennai

(i) To display the detail of all the products in ascending order of product names (ie Pname).

(ii) To display product name and price of all those products, whose price is in the range of 10000 and 10555 (both values inclusive).

(iii) The display the number of products, which are supplied by each supplier.

(iv) To display the price, product name and quantity of those products which have quantity more than 100 4

Obtain the outputs of the following :-
(a) Select distinct supcode from products;
(b) Select Max (Price), Min (Price) from PRODUCTS;
(c) Select Price �֍ Qty,Amount
From PROCUCTS where Pin = 104;
(d) Select Pname, Sname from Products P, Supplier S
Where P.Supcode = S. Supcode And Qty > 100; 2

Q.6 (i) Verify the following using Boolean laws 2
X+Z= X + X'. Z + Y.Z

(ii) Obtain the Boolean Expression for the logic circuit shown below :- 2
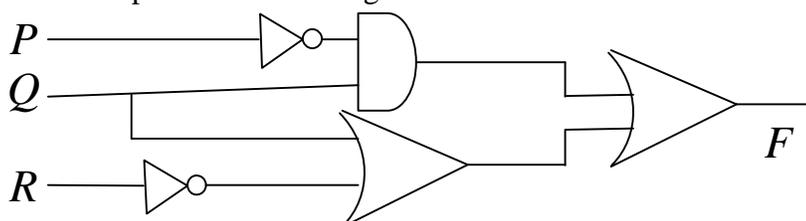
(iii)   Write the SOP form of the function F (A,B,C)for the following truth table representation of F.   1

A	B	C	F
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

(iv) Obtain the minimal form for the following Booean expression using karnaugh's Map :

   $F (U,V,W,Z) = \sum (0,1, 2, 3, 6,7,8, 9,10,13, 15)$ 3

Q.7 (a) Knowledge Supplement organization has set up its new center at Mangalore for its office and web based activities .it has four buildings as shown in the diagram below :-

Alpha

Gamma

Beta

Lamda

Center to center distances between various buildings :-

Alpha to Beta	50 m
Beta to Gamma	150 m
Gamma to Lamda	25 m
Alpha to Lamda	170 m
Beta to Lambda	125 m
Alpha to Gamma	90 m

   Number of computers

Alpha	25
Beta	50
Gamma	125
Lambda	10

(i)   Suggest a cable layout of connections between the buildings.
(ii)   Suggest the most suitable place (i.e. building) to house the server of the organization with a suitable reason.
(iii)   Suggest the placement of the following devices with the justification. (a) Repeater (b) Hub / switch
(iv)   The organization is planning to link its front office situated in the city in ahilly region where cable connection is not feasible, suggest an economic way to connect it with reasonably high speed?

                                              1×4=4

(b) Write two advantages of Bus topology.   1
(c) What is the difference between board band and narrowband chanels.   1
(d) Write two advantage of using open source software's over proprietary soft ware.   1
(e) Write full forms of the following :-   (i) SIM   (ii) EDGE   1
(f) Write any two characteristics of cloud computing.   1
(g) Write two characteristics of Wi-Fi.   1

** ALL THE BEST **

Q.25 Discuss the (i) oxidation states (ii) oxidizing character of halogens.

5

OR

(i) How do you account for the reducing behavior H_3PO_2 on the basis of its structure?

(ii) All the five bonds in PCls are not equal. Justify.

Q.26 Give the evidences in favour of chain structure of glucose with – CHO & – OH functional groups. 5

OR

Write the meaning of –

(i) Peptide bond.

(ii) Reducing & Non reducing sugars

(iii) Denaturation of protein

(iv) Anomer & Epimer

(v) α & β form of D-glucose

*****

Roll No. _____

Code. No. 12/Chemistry (043) SET-A/NLCS/22

Pre Board Examination 2014 – 15

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.
Question No. 23 carry Four Marks.
Question No. 24 to 26 carry Five Marks.

Q.1 If three element X,Y & Z crystallize in a cubic solid lattice with X atoms at corners, Y at cube centre & Z atoms at edges, then write the formulae of the solid? 1

Q.2 Which will have higher B.P. **0.1** M NaCl or **0.1**M $BaCl_2$ in water? 1

Q.3 Why it is not possible to determine the potential of single electrode? 1

Q.4 A reaction is 50% complete in 2hrs. & 75% complete in 4 hrs. What is the order of reaction? 1

Q.5 An ore sample of galena (PbS) is contaminated with ZnS. Name the chemical which can be used to concentrate galena selectively by forth floatation method. 1

Q.6 What is the difference between multimolecular & Macromolecular colloids? 2

Q.7 Why is vinyl Chloride is less reactive than ethyl Chloride? 2

Q.8 The p-isomer of dichlorobnzene has higher M.P. than O-& m-isomer. Why? 2

Q.9 You are given benzene, Conc. H_2SO_4, NaOH. Write the equations for the preparation of phenol using these reagents. 2

Q.10 Explain the mechanism of acid catalysed dehydrations of an alcohol forming an alkene? 2

Q.11 A solution of $CuSO_4$ is electrolyoed for 10 min. with a current of 1.5 amperes. What is the mass of copper deposited at the cathode? 3

Q.12 Although thermodynamically possible, in practice Magnisium metal is not used for reduction of Alumina in the metallurgy of Aluminium. Why? 3

Q.13 Write the balanced equation for the followings :- 3

(i) NaCl is heated with sulphuric acid in the presence of MnO_2

(ii) SiO_2 is treated with HF.

(iii) Iodine is treated with conc. HNO_3.

Q.14 Write the steps involved in the preparation of – $K_2Cr_2O_7$ from Na_2CrO_4. 3

Q.15 Compare the Magnetic beheviour of the complex entities $\left[Fe(CN)_6 \right]^{-4}$ & $[FeF_6]^{3-}$. 3

Q.16 Explain : 3

(i) In the preparation of acetaldehyde from ethyl alcohol. It is distilled out as soon as it is formed.

(ii) Hydrazones of acetaldehyde are not prepared in highly acidic medium.

(iii) Treatment of C_6H_5CHO with HCN gives a mixture of two isomers which cannot be separated out even by very careful fractional distillation. 3

Q.17 How will you obtain - 3

(i) Urotropine from formaldehyde

(ii) Anisole from phenol

(iii) ethyl acetate from acetaldehyde

Q.18 Write structure of different isomers corresponding to the molecular formula C_3H_9N. Write IUPAC names of the isomers which will librate N_2 gas on treatment with Nitrous acid. 3

Q.19 What is high density & Low density polyetheye? 3

Q.20 Explain – Tranquilizers (ii) Auaesthetics 3

Q.21 If the radius of on octahedral void is r & the radius of an atom in close packing is R, derive the relationship between r & R?3

Q.22 Explain - (i) Breding's arc method (ii) peptisation 3

Q.23 Common salt (NaCl) & CaCl₂ are used to clean snow on the roads the cost of Na Chloride & CaCl₂ is almost the same. As a student of chemistry which salt would you prefer to purchase & why? 4

Q.24 What is Arrhenius equation to describe the effect of temperature on the rate of a reaction? How can it calculate the activation energy of a reaction? 5

OR

Show that half life period of a 1ˢᵗ order reaction is independent of its initial concentration?

(i)   When and how does placenta develop in human females?

(ii)   How is placenta connected to the embryo?

(iii)   Placenta acts as endocrine gland. Explain.

Q.25   (i)   State the arrangement of different genes that in bacteria is referred to as operon.

(ii)   Draw a schematic labeled illustration of lac operon in a 'switched on' state.

(iii)   Describe the role of lactose in lac operon.   5

OR

Describe Meselson's and Stahl's experiment along with its aim.

Q.26   (i)   Describe the characteristics a cloning vector must possess.

(ii)   Why DNA cannot pass through cell membrane? Explain. How is a bacterial cell made competent to take up recombinant DNA from the medium?

OR

Explain by the help of a suitable example how insect resistant crops have been developed using the techniques of biotechnology.   5

*****

Pre Board Examination 2014 – 15

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

General Instructions:

(i)   All questions are compulsory.

(ii)   The question paper consists of five sections A, B, C, D and E.
Question No. 1 to 5 carry **1 mark** each. Question No. 6 to 10 carry **2 marks** each. Question No. 11 to 22 carry **3 marks** each. Question No. 23 is a value based and one question carry **4 Marks**. Question No. 24 to 26 are **5 marks** question wherein an internal choice has been provided.

SECTION – A

Q.1   Give an example of plant that reproduces asexually by leaves.   1

Q.2   How do interferon's help in modifying immunity?   1

Q.3   What is organic farming?   1

Q.4   Which is the first restriction enzyme?   1

Q.5   Identify the gaseous and solid reservoir of carbon in nature.   1

SECTION – B

Q.6
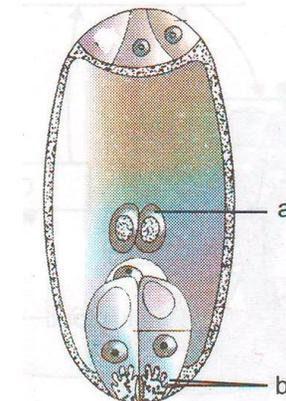
Label a and b and state their roles. What is the structure drawn called.

Q.7 Who gave the theory Abiogenesis is followed by biogenesis? What does it mean? Who performed the experiment to prove the above theory? What was the observation in the experiment? 2

Q.8 How will you identify that a given pea plant is pure or hybrid? Show by means of crosses. 2

Q.9 How is humulin engineered for the benefit of mankind? 2

Q.10 What is biofortication and state its objectives? 2

SECTION – C

Q.11 How did process of RNA interference help to control the nematode from infecting roots of tobacco plant? Explain. 3

Q.12 Why are beehives kept in crop fields during flowering period, Name any two crop fields where this is practiced. 3

Q.13 What are anaphylactic shocks? What is the medication give to the patient? 3

Q.14 Explain how Bt can be used as a bio control agent. 3

Q.15 List any three out breeding devices that flowering plants have developed and explain how they encourage cross pollination? 3

Q.16 What are major differences between Oogenesis and spermatogenesis? 3

Q.17 Explain the inheritance of Thalsemia and write the difference between α and β Thalasemia (any two). 3

Q.18 What is Griffith's experiment about? Describe it and also mention the conclusion on which he arrived? 3

Q.19 Differentiate between gaseous and sedimentary cycles of matter. 3

Q.20 Within a region species richness increases with increasing area explored but only upto a certain limit. why? 3

Q.21 What is resource partitioning? Give an example. How is it different from Gause's competion exclusion? 3

Q.22 Explain the terms 3
(a) Polymorphism   (b) Variable Number of Tandem Repeats

SECTION – D

Q.23 Kudangulam a small coastal town in the South Tamil Nadu, has been in news recently for some time, as there have been protests against establishing a nuclear power plant. 4

(i) What in your opinion can be the advantage of such power plants.

(ii) Enlist the arguments (disadvantages) the native people have, against the power plant.

(iii) In case of an accidental leakage of radioactive substances, what will be the consequences faced by human beings and other life forms?

(iv) What value are evinced by the protestors?

SECTION – E

Q.24 (i) Draw a diagrammatic sectional view of human ovary showing different stages of oogenesis along with corpus luteum.

(ii) Where is morula formed in human? Explain the process of its development from zygote.

OR

Q.23 One day Chetan's mother developed a severe stomach ache all of a sudden. She was rushed to the doctor who suggested for an immediate endoscopy test and gave an estimats of expenditure for the same. Chetan immediately contact his class teacher and shared the information with her. The class teacher arranged for the money and rushed to the hospital. On realizing that Chetan belonged to a below average income group for the test fee. The test was conducted successfully.

Answer the following Question :-
(i) Which principle in optics is made use of in endoscopy?
(ii) Briefly explain the value reflected the action taken by the teacher?
(iii) In what way do you appreciate the response of the doctor on the given situations?

Q.24 State Gauss's law. Use it to deduce the expression for the electric field due to a uniformly charged solid the sphere. Also draw graph for electric field with distance r.

OR

To find out electric potential due to an ideal dipole at any generated point make an angle θ with dipole moment. Also find potential at equator plane and polar plane.

Q.25 **(i)** What are coherent sources of light? Two slits in Young's double slit experiment are illuminated by two different sodium lamps emitting light of the same wave length. Why no interference pattern observed?

(i) Obtain the condition for getting dark and bright fringer in young's experiment. Hence write the expression for the fringe width?

OR

Use Huygens's principle to explain the formation of diffraction pattern due to a single slit illuminated by a monochromatic source of light. Also find condition for bright and dark band with centre maximum?

Q.26 Draw a schematic sketch of a cyclotron. State its working principle. Describe briefly how it is used to accelerate charged particle. Show that the period of a revolution of an ion is independent of its speed or radius of the orbit. **OR**

(i) Derive on expression for the force per unit length experienced by two infinitely long straight parallel wire, carrying currents in the same direction.

(ii) (a) Use the above to define one ampere.
(b) Show that the oppositely directed parallel currents repel whereas currents flowing in the same direction attract.

Pre Board Examination 2014 – 15

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

General Instruction:-
  (i) All questions are compulsory.
  (ii) Question No. 1 to 5 are very short answer question and carry **1 mark** each.
  (iii) Question No. 6 to 10 are short answer question carry **2 marks** each,
  (iv) Question No. 11 to 22 are also short answer question carry **3 marks** each.
  (v) Question No.23 may be value based carrying **4 marks.**
  (vi) Question No. 24 to 26 are long answer question carry **5 marks** each.

$$C = 3 \times 10^8 \, m/s, h = 6.63 \times 10^{-34} \, js, \, e = 1.6 \times 10^{-19} C.$$

$$\mu_0 = 4\pi \times 10^{-7} Tm/A, \quad \frac{1}{4\pi\varepsilon_0} = 9 \times 10^9 \, Nos^2/C^2$$

$$m_e = 9.1 \times 10^{-31} kg, \, m_p = 1.67 \times 10^{-27} kg.$$

Q.1 What should be the length of dipole antenna for a carrier wave of frequency 5×10^4 Hz.

Q.2 How will the intensity of maxima and minma, in the young's double slit experiment change, if one of the two slits is covered by a transparent paper with transmit only half of the light intensity?

Q.3 A resistance R is connected across a cell of Emf E, and internal resistance r. Write the condition when maximum current flowing in the circuit?

Q.4 Ultraviolet light is incident on two photosensitive materials having work functions w_1 and w_2 ($w_1 > w_2$). In which case will the kinetic energy of the emitted electrons be greater? Why?

Q.5 Name the absorbing material used to control the reaction rate of neutrons in a nuclear reactor?

Q.6 What is the value of polarizing angle of a medium of refractive index $\sqrt{3}$?

Q.7 Prove that an ideal inductor does not dissipate power in an A.C. circuit.

Q.8 Draw a sketch of a plane electromagnetic wave propagating along the z-direction. Depict clearly the directions of electric and magnetic fields varying sinusoid ally with z.

Q.9 What is sky wave communication? Why is this mode of propagation restricted to the frequencies only up to few MHz?

Q.10 Using the curve for the binding energy per nucleon as a function of mass number A state clearly how the release in energy in the processes of nuclear fission and nuclear fusion can be explained?

Q.11 Three identical capacitors c_1, c_2 and c_3 of capacitance 6 μ f each are connected to a 12V battery as shown –
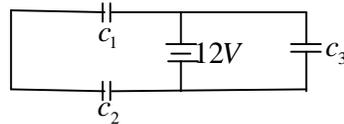
Find – (i) Charge on each capacitor   (ii) Equivalent capacitance of net work.

Q.12 A long solenoid of length ℓ having N turns carries a current I. Deduce the expression for the magnetic field in the interior of the solenoid.

Q.13 Define the term – (i) cut off voltage and (ii) threshold frequency, in relation to the phenomenon of photoelectric effect.
Using Einstein's photoelectric equation show how the cut off voltage and threshold frequency for a given photosensitive material can be determine with the help of a suitable graph?

Q.14 A series LCR circuit is connected to an A.C. source. Using the phasor diagram, derive the expression for the impedance of the circuit, plot a graph to show the variation of current with frequency of the source, explaining the nature of its variation?

Q.15 Using Bohr's postulates for hydrogen atom. Show that the total energy (E) of the electron in the stationary state can be expressed as the sum of kinetic energy (K) and potential energy (V), where K= – 2U. Hence deduce the expression for the total energy in the nth energy level of hydrogen atom.

Q.16 What is an microscope? Draw the labeled ray diagram when final image forms at least distance of distinct vision. Deduce expression for magnifying power.

Q.17 Explain briefly with the help of a circuit diagram, the working principle of a transistor amplifier as an oscillation?

Q.18 (i) State the principle of working of a meter bridge.
(ii) In a meter bridge balance point is found at a distance ℓ_1 with resistance R and S as shown in fig.
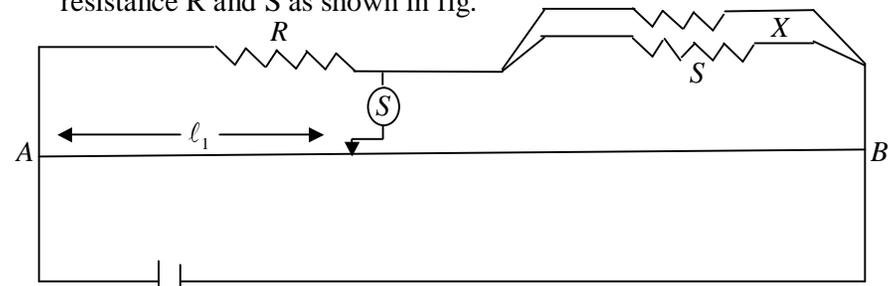
When an unknown resistance X is connected in parallel with the resistance S, the balance point slifts to a distance ℓ_2. Find the expression for X in terms of ℓ_1 ℓ_2 and S.

Q.19 (a) Obtain the expression for the magnetic energy stored in a solenoid due to the current I flowing in it, in terms of magnetic field B, area A and length ℓ of the solenoid.

Q.20 Distinguish between unpolarised and plane polarized light. An unpolarised light is incident on the boundary between two transparent media. State the condition when the reflected wave is totally plane polarized. Find out the expression for the angle of incidence in this case?

Q.21 What is meant by detection of a signal in a communication system? With the help of a block diagram explain the deterction of A.M. signal.

Q.22 The circuit in fig shows two cells connected in opposition to each other.

Cell E_1 of Emf 6V and internal resistance 2Ω, the cell E_2 is of Emf 4V and internal resistance 8Ω. Find the potential difference between the point A and B.
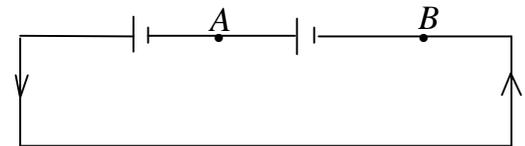
Roll No. _____

Code. No. 12/Physical Ed.(**SET – A**)/NLCS/32
Pre Board Examination 2014 – 15

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

PART - A

Q.1 What do you mean by social environment? 1

Q.2 Define the term 'society'. 1

Q.3 What are renewable resources? 1

Q.4 Define adventure sports. 1

Q.5 What do you mean by food myths? 1

Q.6 What you mean by motor development? 1

Q.7 What do you mean by friction? 1

Q.8 What is negative body image? 1

Q.9 Enlist the essential elements of a positive sports environment. 2

Q.10 Explain the meaning of leadership in detail. 2

Q.11 Discuss various types of friction. 2

Q.12 State any two factors which affect the projectile trajectory. 2

Q.13 What do you man by short term and long term endurance? 2

Q.14 What do you mean by flexibility? Discuss the various types of flexibility. 3

Q.15 Describe any three techniques of anxiety management. 3

Q.16 Mention the advantages and disadvantages of weight training. 3

Q.17 Discuss any three pitfalls of dieting. 3

Q.18 What is league tournaments? Explain the types, merits and demerits of league tournaments. 5

Q.19 Explain any five common postural deformities. 5

Q.20 Explain the chair stand test and Arm curl test. 5

Q.21 What do you mean by ageing? What is the role of regular exercises on Ageing process. 5

PART - B

Q.22 Write the history of a game of your choice. 3

Q.23 Write any three fundamental skills of your game. 3

Q.24 Write about any three latest general rules of your game. 3

Q.25 List down the national sports awards and explain Arjuna Award in detail. 3

Q.26 Explain the common soft tissue injuries in your game. 4

Q.27 Draw the field / court / ground with all specifications and measurement of your game. 4

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Roll No. _____   SET – A

Pre Board Examination 2014 – 15

Time: 3:00 Hrs.   **M. M. 80**

GENERAL INSTRUCTIONS:

(i) Answer to Questions carrying One Mark may be from one word to one sentence.

(ii) Answer to Questions carrying Three Marks may be from 50 – 75 words.

(iii) Answer to Questions carrying Four and Five Marks may be about 150 words.

(iv) Answer to Questions carrying Six Marks may be above 200 words.

(v) Attempt all parts of a Question together.

Q.1 Unique Ltd. is using eco friendly method of production? Identify the objective it is trying to achieve?   1

Q.2 State one objective of preliminary screening / Interviews?   1

Q.3 At which level directing function is performed?   1

Q.4 How is the price of securities determined in the secondary market? 1

Q.5 What is the other name of a long term investment decision?   1

Q.6 Why is packing called silent salesman?   1

Q.7 What do you mean by "Bridge financing"?   1

Q.8 Name the Element of marketing which make the product available to the target customer?   1

Q.9 Explain any three points of importance of business environment? 3

Q.10 Describe the meaning of "Replacement of Rule of thumb with Science".?   3

Q.11 Define training? How is it different from education.?   3

Q.12 Give any three differences between leaders and managers?   3

Q.13 **"An ideal control system is the one that checks every bit of performance"**.

Do you agree with this statements? Give any two reasons in support of your answer? 3

Q.14 Why does the principle of unity of command not hold good in an organization using technique of functional foreman-ship? 4

Q.15 Explain any four types of plan? 4

Q.16 Can an over burdened manager take help from his subordinates? How? Explain the three important things he should keep in mind while taking such help? 4

Q.17 "It is through motivation that managers can inspire their subordinates to give their best to the organization" Explain how? 4

Q.18 When was new industrial policy introduced? What was the main motive behind it? Describe that policy? 4

Q.19 **"Blindly following the goal of customer satisfaction has led to many social and environmental ills"**. Do you agree? What should be done? 4

Q.20 What is meant by coordination? How does it **"integrate group efforts" and "ensure unity of actions"**? Explain 5

Q.21 The staffing function is performed by every manager and not necessarily by a separate department. Explain. 5

Q.22 "Stock market quotations contribute to better allocation of capital and promoting the habits of savings and investment? Explain. 5

Q.23 How is a functional structure different from a divisional structure? 6

OR

Explain the meaning and process of organizing?

Q.24 You are the finance manager of a company. The board of directors have asked you to decide the dividend policy. What factors would you keep in mind to perform this function?

OR

Explain the various segments of NSE? 6

Q.25 Raju, a consumer purchased medicines without noticing the date of expiry. He also did not obtain the cash memo. Do you think he will be able to protect himself by the loss caused due to expired medicine? Give reasons to support your answer? 6

OR

Rekesh saw an advertisement in the news paper regarding a steam iron and ordered for the purchase of the same to shopkeeper. What will be his responsibilities as a consumer so that he should not be exploited by the shopkeeper? Write any four such responsibilities?

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Q.29   Calculate national Income by   6
      (i) Income   (ii) Expenditures method

(ì in crores)

(i) Interest	150
(ii) Rent	250
(iii) Government final consumption expenditure	600
(iv) Private final consumption expenditure	1200
(v) Profit	640
(vi) Compensation of Employs	1000
(vii) Net factor income to abroad	30
(viii)Net domestic capital formation	340
(ix) Net exports	(−) 40
(x) Net indirect taxes	60

OR

Calculate (i) national income and (ii) Gross national disposable income.   6

(ì in crores)

(i) Private final consumption expenditure	1000
(ii) Net factor income to abroad	(−) 20
(iii) Net domestic capital formation	300
(iv) Govt. Final consumption expenditure	200
(v) Net current transfer to rest of the world	10
(vi) Gross domestic capital formation	350
(vii) Net indirect tax	80
(viii)Net imports	40

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Pre Board Examination 2014 – 15

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

General instructions:
1. All questions in both the sections A & B are compulsory.
2. Questions No. 1 -5 and 17-19 are very short answer type questions carrying **1 Mark**. They are required to be answered in one sentence each.
3. Questions No. 6-10 and 20-22 are short answer type questions carrying **3 Marks** each. Answers to them should not normally exceed 60 words each.
4. Questions 11-13 and 23-24 are also short answer type questions carrying **4 Marks** each. Answers to them should not normally exceed 70 words each.
5. Questions 14-16 and 25-29 are long answer type questions carrying **6 Marks** each. Answers to them should not normally exceed 100 words each.

SECTION – A

Q.1   What is meant by economizing the use of resources?   1
     (a)   Resources are getting efficiently used
     (b)   Resources are getting fully used
     (c)   Both (a) and (b)
     (d)   None of the above

Q.2   What AP is maximum MP will be –   1
         (a) increasing   (b) decreasing
         (c) constant   (d) equal to AP

Q.3   A perfectly supply curve will be –   1
     (a)   Parallel to X axis   (b) Parallel to Y axis
    c) downward sloping   (d) None of these

Q.4   What can you say about member of buyer & sellers in the monopolistic market ?   1
    (a) Very no. of buyer & sellers   (b) Few buyers & sellers
    (c) Single buyer & seller   (d) None of the above

Q.5   Name the basic parameters of micro economics?   1

Q.6   'A loss making firm has in elastic supply'. Do you agree? If you yes, why?   3

Q.7   Explain any three determinants of demand for commodity.   3

Q.8 Suppose a consumer can afford to buy 6 units of good X and 8 units of good Y if he spends her entire income. The prices of two goods are ì 6 and ì 8 respectively. How much is the consumer income? 3

OR

How does the budget line change if the consumer's income increases to ì 40 but the price remains unchanged.

Q.9 At a price of ì 5 per unit of a commodity A, total revenue is ì 800. When its price rises by 20%, total revenue increases by ì 400. Calculate its price elasticity of supply. 3

Q.10 Calculate AP and MP :- 3

Labour	10	20	30	40	50
TP	100	220	360	460	500

Q.11 Discuss the various ways in which a monopoly market structure may arise. 4

Q.12 Labour is under utilized due to mass unemployment in India. In that case production takes place on the production possibility curve, outside the curve or inside the curve. Draw appropriate curve for the above mentioned case. 4

Q.13 What price a consumer is ready to pay for a commodity in state of equilibrium? 4

Q.14 Define the degrees of elasticity of demand with their diagrams? 6

Q.15 (a) Explain the relationship between MC and AC. 3+3=6
(b) Complete the table :

Output	AFC	AVC	MC	TC	AC
1	-	-	18	-	-
2	36	16	14	-	-
3	24	-	-	120	-
4	18	18	-	-	-

Q.16 Market for a good is in equilibrium. There is simultaneous increase both in demand & supply of the good. Explain its effect on market price. 6

SECTION – B

Q.17 Central Bank controls their credit by - 1
(a) CRR (b) SLR (c) both (a) & (b) (d) None of these

Q.18 In case of currency appreciation, the domestic currency is 1

(a) less valuable (b) more valuable (c) rise (d) fall

Q.19 The difference between narrow money & broad money is - 1
(a) Coin and currency (b) Currency
(c) Saving deposits of banks (d) time deposits with banks

Q.20 India is suffering from the problem of fiscal deficit for the last many years. Explain any two steps to deal with such a problem. 3

Q.21 Calculate net value added at factor cost from the following data : 3

(ì in Lakh)
(i) Sales		700
(ii) Purchase of machine for Installation in factory		100
(iii) Subsides		50
(iv) Change in stock	(−)	30
(v) Purchase of Raw Material		400
(vi) Rent		60
(vii) Consumption of fixed capital		20

Q.22 State the components of the capital account of BOP account. 3

Q.23 Distinguish between revenue deficit and fiscal deficit. 4

Q.24 C=100+ 0.4 Y is the consumption function of an economy where C is consumption expenditure and Y is national Income Investment expenditure is 1100. Calculate. 4
(a) Equilibrium level of national income
(b) Consumption expenditure at equilibrium of national income

Q.25 Explain the problem of Barter system. Give an example of Barter system which his present even today. Also explain Low did money solved the problems of Barter system? 6

Q.26 Explain the theory of determination of income and employment with the help of AD and AS curves? 6

Q.27 Explain briefly precautions required to be taken in estimating national income by expenditure method? 6

Q.28 (i) What is marginal propensity to consume? How it is related to marginal propensity to save. 2+4=6
(ii) Explain the different types of foreign exchange rate system.

Q.25 There are three coins. One is a two headed coin (having head on both faces), another is a biased win that comes up heads 75% of the time and third is an unbiased coin. One of the three coins is chosen at random and tossed, it shows head, what is the probability that it was the two headed coin?

Q.26 Solve the following differential equation :

$$x\cos\left(\frac{y}{x}\right)(ydx + xdy) = y\sin\left(\frac{y}{x}\right)(xdy - ydx).$$

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Second Pre Board Examination 2014 – 15

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

General Instruction :-

    Section – A each Question carry **One Mark**.
    Section – B each Question carry **Four Marks**.
    Section – C each Question carry **Six Marks**.

SECTION – A

Q.1 Prove that : $\tan^{-1}\frac{1}{3} + \tan^{-1}\frac{1}{2} = \frac{\pi}{4}$.

Q.2 Show that the function $f : R \to R$ defined by $f(x) = 3x + 7$ is one-one.

Q.3 If $A = \begin{bmatrix} \cos\alpha & \sin\alpha \\ -\sin\alpha & \cos\alpha \end{bmatrix}$, then show that $AA' = I$.

Q.4 A line makes angles 30°, 60°, 90° with co-ordinate axis. Find its direction cosines.

Q.5 If the vectors $2\hat{i} - 5\hat{j} + b\hat{k}$ and $2\hat{i} + a\hat{j} + 4\hat{k}$ are parallel, find the values of a and b .

Q.6 Without expanding, show that : $\begin{vmatrix} 42 & 1 & 6 \\ 28 & 7 & 4 \\ 14 & 3 & 2 \end{vmatrix} = 0$.

SECTION – B

Q.7 Given relation R in the set Z of all integers is given by $R = \{(a,b) \in Z \times Z : a - b \text{ is an integer}\}$. Find whether R is an equivalence relation or not.

OR

Let $*$ be binary operation of N×N defined by (a,b) $*$ (c,d) = (a+c, b+d). Show that $*$ is commutative as well as associative. Find the identity element for the operation $*$ on N×N, if any.

Q.8 If the function $f(x) = \begin{cases} 3ax + b & , \quad if \quad x > 1 \\ 11 & , \quad if \quad x = 1 \\ 5ax - 2b & , \quad if \quad x < 1 \end{cases}$ is continuous at $x = 1$,

Find the values of a a and b .

Q.9 Find $\dfrac{dy}{dx}$, if $x^y + y^x = a^b$.

<center>OR</center>

If $x^m y^n = (x+y)^{m+n}$, prove that $\quad$ (i) $\dfrac{dy}{dx} = \dfrac{y}{x}$ $\quad$ (ii) $\dfrac{d^2 y}{dx^2} = 0$.

Q.10 Evaluate : $\displaystyle\int \dfrac{x^2 \tan^{-1} x}{1+x^2} dx$. $\qquad$ **OR** $\qquad \displaystyle\int \dfrac{\sqrt{16+(\log x)^2}}{x} dx$.

Q.11 Solve for x : $2\tan^{-1}(\cos x) = \tan^{-1}(2\cos ecx)$.

Q.12 Using the properties of determinants, evaluate : $\begin{vmatrix} -a^2 & ab & ac \\ ba & -b^2 & bc \\ ca & cb & -c^2 \end{vmatrix}$.

Q.13 Find $\vec{p}$, given that $\vec{p} \times \vec{b} = \vec{c} \times \vec{b}$ and $\vec{p}.\vec{a} = 0$. Given that
$\vec{a} = 2\hat{i} + \hat{k}, \vec{b} = \hat{i} + \hat{j} + \hat{k}$ and $\vec{c} = 4\hat{i} - 3\hat{j} + 7\hat{k}$.

Q.14 If $A(0,6,-9), B(-3,-6,3)$ and $C(7,4,-1)$ are three points. Find the equation of the line AB. If D is the foot of the perpendicular drawn from C to the line AB, find the co-ordinates of point D.

Q.15 Show that the equation of the tangent to the ellipse $\dfrac{x^2}{a^2} + \dfrac{y^2}{b^2} = 1$ at

(x_0, y_0) is $\dfrac{xx_0}{a^2} + \dfrac{yy_0}{b^2} = 1$.

<center>OR</center>

The surface area of a spherical bubble of water increasing at the rate of 2cm²/sec. Find the rate of increase of volume of the bubble, at the instant when its radius is 6cm.

Q.16 A card from a pack of 52 cards is lost; from the remaining cards of the pack, two cards are drawn and are found to be both diamonds.
(i) Find the probability of lost card being a diamond.
(ii) **While playing in the ground you found a purse containing rupees and some documents, what will you do?**

Q.17 If $y = \sin(2\sin^{-1} x)$, prove that $(1-x^2)y'' - xy' + 4y = 0$.

Q.18 Evaluate : $\displaystyle\int \dfrac{6x+7}{\sqrt{(x-5)(x-4)}} dx$.

Q.19 Evaluate : $\displaystyle\int_0^{\pi/4} \dfrac{\sin 2\theta d\theta}{\sin^4 \theta + \cos^4 \theta}$.

<center>**SECTION – C**</center>

Q.20 Sketch the graph $y = |x+1|$. Evaluate $\displaystyle\int_{-3}^{1} |x+1| dx$. What does the value represent on graph? Shade it.

<center>OR</center>

Using integration, find the area of the region given by
$\{(x.y) : x^2 \le y \le |x|\}$.

Q.21 Show that the lines $\dfrac{x-5}{4} = \dfrac{y-7}{4} = \dfrac{z+3}{-5}$ and $\dfrac{x-8}{7} = \dfrac{y-4}{1} = \dfrac{z-5}{3}$
intersect. Also find the intersection point.

Q.22 Show that the semi-vertical angle of the right circular cone of given slant height and maximum volume is $\tan^{-1}\sqrt{2}$.

<center>OR</center>

Find the point on the curve $y^2 = 4x$ which is nearest to point $(2,-8)$.

Q.23 Kellogg is a new cereal formed of a mixture of bran and rice that contains at least 88 gram of protein and at least. 36 milligram of iron. Knowing that bran contains 80g protein and 40mg of iron per kg, and that rice contains 100g of protein and 30mg of iron per kg, find the minimum cost of producing this new cereal if bran costs Rs. 5 per kg and rice cost Rs. 4 per kg.
Value Based Question → Write the constituents of balanced diet.

Q.24 If $A = \begin{bmatrix} 1 & 2 & 5 \\ 1 & -1 & -1 \\ 2 & 3 & -1 \end{bmatrix}$, A^{-1}. Hence, solve the following system of

equations : $\begin{aligned} x + 2y + 5z &= 10 \\ x - y - z &= -2 \\ 2x + 3y - z &= -11 \end{aligned}$.