Half Yearly Examination 2016 – 17

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

Q.1   What do you mean by partnership deed?   **1**

Q.2   Write any one difference between revaluation account and realization account.   **1**

Q.3   Give formula for calculation of super profit.   **1**

Q.4   A, B and C are partners in ratio of 3:2:1. B retired, find the gain ratio of A and C.   **1**

Q.5   How many types of shares? Give name.   **1**

Q.6   What is meant by irredeemable debenture?   **1**

Q.7   A partner of a firm withdrawal following amount as a drawing

Date	01-02-2016	31-05-2016	01-07-2016	30-9-2016	01-12-2016
Amount (`)	20,000	18,000	22,000	15,000	25,000

Calculate interest on drawings @ 6% per annum for the year ending 31st Dec. 2016.   **3**

Q.8   Write any three uses of security premium.   **3**

Q.9   Write any three difference between share and debenture.   **3**

Q.10   A, B and C are partners in ratio of 2:2:1. C dies on 31st august, 2014. Books are closed on 31st march every year. Sales for the year 2013-14 amounted to ` 6, 00,000. Sales of ` 1,20,000 generated from 1st April 2014 to 31st august 2014. The profit for the year 2013-14 amounted to ` 90,000. Calculate C's share in the profits.   **3**

Q.11   Swastik ltd. Issued 40000 equity share of ` 10 each at 20% premium. Company call ` 4 on application including premium. Company received 50000 applications. Company allotted all the shares to all the applicants on pro-rata basis. Suresh, a share holder of company fail to pay ` 2000 at the time of allotment on his holding. Company call ` 7 per share up to allotment. Company forfeited all the share of suresh immediately after allotment and 70% share from forfeited shares reissued to raman at ` 8 per share as `7 paid up. Give journal entries for forfeited and reissued of shares in the books of company.   **4**

Q.12   X, Y and Z are partners in a firm. On 31st dec. 2012 X retired from the firm. X capital account shows credit balance `45000 after all the adjustments. Firm paid ` 3000 in cash and remaining balance will be paid in three equal annual installments with interest @ 8% per annum. You are required to prepare X's loan account up to final payment of loan.   **4**

Q.13   (a) Surya ltd. Issued 5000, 7%Debenture of ` 10 each at 2% premium and repayable at 5% premium. Give journal entries for issue of debentures.

(b) Star ltd have outstanding balance of 5% debenture of ` 5, 00,000. Company redeemed all the debenture by conversion in to the equity shares. For this company issued equity shares at 25% premium. You are required to pass journal entries for redemption of debenture.   **6**

Q.14   Silver and Gold are partners in a firm in profit sharing ratio of 3:2. On first April, 2015 their capital balances ` 4,00,000 and ` 5,00,000 respectively. Diamond entered in to the firm on this date for ¼ share in profits with capital ` 3,00,000. Silver and Gold decided adjust their capital as per diamond's capital from cash brought or withdrawal. Partnership deed provided following—
(a) Interest on capital allowed @ 10% per annum
(c) Commission to silver ` 2500 per quarterly.
(d) Diamond guaranteed by silver and gold for minimum profit ` 130000 (including interest on capital) per annum
For the year ending 31st march 2016 firm earn profit ` 5,00,000. Prepare profit and loss appropriation account from the above information's.   **6**

Q.15   Bhuvan, Suraj and Ibrahim were partners in a firm sharing profits in the ratio of 3 : 2 : 1.On 30th June, 2014, they decided to dissolve the firm. Following was the Balance Sheet of the firm on that date.   **6**

Liabilities	Amount (`)	Assets	Amount(`)
Creditors	50,400	Cash	13,700
Investment Fluctuation Fund	10,000	Stock	20,100
Reserve Fund	12,000	Debtors	62,600
Capitals :		Investment	16,000
Bhuvan 30,000		Furniture	20,000
Suraj 20,000			
Ibrahim 10,000	60,000		
	1,32,400		**13,2,400**

The assets were realized and the liabilities were paid off as follows :
(a) Investments were taken over by Bhuvan for ` 18,000.
(b) Stock was taken over by Suraj for ` 17,500 and furniture was taken over by Ibrahim at book value.
(c) ` 60,500 were realized from the debtors.
(d) Creditors were settled in full and realization expenses were ` 4,500.
Prepare Realisation account, Cash account and Partners' Capital accounts.

Q.16   Following is the Balance Sheet of Amit and Vidya as at 31st March, 2014.   **8**

Liabilities	Amount (`)	Assets	Amount(`)
Creditors	26,000	Bank	20,000
Employees Provident Fund	16,000	Stock	30,000
Workmen's Compensation fund	30,000	Debtors 44000	
		Less : provision for	
Capitals :		bad debts	42,000
Amit 1,10,000		2,000	1,20,000
Vidya 60,000	1,70,000	Plant and Machinery	20,000
		Goodwill	10,000
		Profit and Loss Account	
Total	**2,42,000**	**Total**	**2,42,000**

On the above date Chintan was admitted as a partner for 1/4 share in the profits of the firm with the following terms :
(a) ` 2,900 will be written off as bad debts.
(b) Stock was taken over by Vidya at ` 35,000.
(c) Goodwill of the firm was valued at ` 40,000. Chintan brought his share of goodwill premium in cash.
(d) Chintan brought proportionate capital and the capitals of the other partners were adjusted on the basis of Chintan's capital. For this necessary cash was to be brought in or paid off to the partners as the case many be.
Prepare Revaluation Account and Partners' Capital Accounts.

Q.17   Dogra Ltd. had an authorised capital of ` 10,00,000 divided into Equity shares of ` 100 each. The company offered 84,000 shares to the public at premium. The amount was payable as follows :   **8**
On Application – ` 30 per share
On Allotment – ` 40 per share (including premium)
On First & Final call – ` 50 per share.
Applications were received for 80,000 shares. All sums were duly received except the following :
Lakhan, a holder of 200 shares did not pay allotment and call money.
Paras, a holder of 400 shares did not pay call money.
The company, forfeited the shares of Lakhan and Paras subsequently, the forfeited shares were reissued for ` 80 per share fully paid-up. Show the entries for the above transaction in the cash book and Journal of the company.

Q.18 Write any two advantage of cash flow statement. **1**

Q.19 'Shri Ltd.' was carrying on a business of packaging in Delhi and earned good profits in the past years. The company wanted to expand its business and required additional funds. To meet its requirements the company issued equity shares of ` 30,00,000. It purchased a computerized machine of ` 20,00,000. It also purchased raw material amounting to ` 2,00,000. During the current year the Net Profit of the company was` 15,00,000.

Find out 'Cash flows from operating activities' from the above transactions. **1**

Q.20 Under which major headings and sub-headings the following items will be shown in the Balance Sheet of a company as per Companies Act, 2013. **4**

(i) Long term loans   (ii) Loose tools   (iii) Trademarks   (iv) Drafts in hand

Q.21 Prepare common size profit and loss account from following information's **4**

Particulars	Amount (`)
Revenue from operations	20,00,000
Other revenue	5,00,000
Cost of revenue from operations	60% of revenue from operations
Other expenses	20% of cost of revenue from operations
Tax rate	40%

Q.22 What is effect on current ratio from following transactions? Give your answers with reason.**4**

(a) Goods sold on credit   (b) Goods purchased with cash

(c) Share issued for payments of bills payable   (d) Bonus shares issued

Q.23 Calculate cash from operating activities from following information's-- **6**

Particulars	Amount (`)
Profit during the year	2,10,000
Transfer in general reserve	38,000
Depreciation charged on machine	25,000
Goodwill written off	12,000
Investment sold (cost ` 28,000)	22,000
Machinery sold (cost ` 40,000)	52,000
Provision for tax	18,000
Provision for dividend	15,000
Payment of dividend	23,000
Payment of tax	25,000
Increase in debtors	3,000
Decrease in stock	9,000
Increase creditors	11,000
Decrease in bills payable	13,000

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Half Yearly Examination 2016 – 17

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

Instructions :

(i) All questions are compulsory.

(ii) You may attempt any section at a time.

(iii) All questions of that particular section must be attempted in the correct order.

SECTION – A READING (30 Marks)

Q.1. Read the passage given below : **12**

1. Maharana Pratap ruled over Mewar only for 25 years. However, he accomplished so much grandeur during his reign that his glory surpassed the boundaries of countries and time turning him into an immortal personality. He along with his kingdom became a synonym for valour, sacrifice and patriotism. Mewar had been a leading Rajput kingdom even before Maharana Pratap

2. occupied the throne. Kings of Mewar, with the cooperation of their nobles and subjects, had established such traditions in the kingdom, as augmented their magnificence despite the hurdles of having a smaller area under their command and less population. There did come a few thorny occasions when the flag of the kingdom seemed sliding down. Their flag once again heaved high in the sky thanks to the gallantry and brilliance of the people of Mewar.

3. The destiny of Mewar was good in the sense that barring a few kings, most of the rulers were competent and patriotic. This glorious tradition of the kingdom almost continued for 1500 years since its establishment, right from the reign of Bappa Rawal. In fact only 60 years before Maharana Pratap, Rana Sanga drove the kingdom to the pinnacle of fame. His reputation went beyond Rajasthan and reached Delhi. Two generations before him, Rana Kumbha had given a new stature to the kingdom through victories and developmental work. During his reign, literature and art also progressed extraordinarily. Rana himself was inclined towards writing and his works are read with reverence even today. The ambience of his kingdom was conducive to the creation of high quality work of art and literature. These accomplishments were the outcome of a longstanding tradition sustained by several generations.

4. The life of the people of Mewar must have been peaceful and prosperous during the long span of time; otherwise such extraordinary accomplishment in these fields would not have been possible. This is reflected in their art and literature as well as their loving nature. They compensate for lack of admirable physique by their firm but pleasant nature. The ambience of Mewar remains lovely thanks to the cheerful and liberal character of its people.

5. One may observe astonishing pieces of workmanship not only in the forts and palaces of Mewar but also in public utility buildings. Ruins of many structures which are still standing tall in their grandeur are testimony to the fact that Mewar was not only the land of the brave but also a seat of art and culture. Amidst aggression and bloodshed, literature and art flourished and creative pursuits of literature and artists did not suffer. Imagine, how glorious the period must have been when the Vijaya Stambha which is the sample of our great ancient architecture even today, was constructed. In the same fort, Kirti Stambha is standing high, reflecting how liberal the then administration was which allowed people from other communities and kingdoms to come and carry out construction work. It is useless to indulge in the debate whether the Vijaya Stambha was constructed first or the Kirti Stambha. The fact is that both the capitals are standing side by side and reveal the proximity between the king and the subjects of Mewar.

6. The cycle of time does not remain the same. Whereas the reign of Rana Sanga was crucial in raising the kingdom to the acme of glory, it also proved to be his nemesis. History took a turn. The fortune of Mewar – the land of the brave, started waning. Rana tried to save the day with his acumen which was running against the stream and the glorious traditions for sometime.

On the basis of your understanding of the above passage answer each of the questions given below with the help of options that follow : 1×4 =4

(a) Maharana Pratap became immortal because :
   (i) he ruled Mewar for 25 years.   (ii) he added a lot of grandeur to Mewar.
   (iii) of his valour, sacrifice and patriotism.   (iv) both (ii) and (iii)

(b) Difficulties in the way of Mewar were :
   (i) lack of cooperation of the nobility.   (ii) ancient traditions of the kingdom.
   (iii) its small area and small population.   (iv) the poverty of the subjects.

(c) During thorny occasions :
   (i) the flag of Mewar seemed to be lowered.   (ii) the flag of Mewar was hoisted high.
   (iii) the people of Mewar showed gallantry.   (iv) most of the rulers heaved a sigh of relief.

(d) Mewar was lucky because :
   (i) all of its rulers were competent.   (ii) most of its people were competent.
   (iii) most of its rulers were competent.   (iv) only a few of its people were incompetent.

Answer the following questions briefly : 1×6=6

(e) Who is the earliest king of Mewar mentioned in the passage ?
(f) What was Rana Kumbha's contribution to the glory of Mewar ?
(g) What does the writer find worth admiration in the people of Mewar ?
(h) How could art and literature flourish in Mewar ?
(i) How did the rulers show that they cared for their subjects ?
(j) What does the erection of Vijaya Stambha and Kirti Stambha in the same fort signify ?
(k) Find words from the passage which mean the same as each of the following : **1×2=2**
   (i) surprising (para 4)   (ii) evidence (para 4)

Q.2. Read the passage given below : **10**

1. To ensure its perpetuity, the ground is well held by the panther both in *space* and in *time*. It enjoys a much wider distribution over the globe than its bigger cousins, and procreates sufficiently profusely to ensure its continuity for all time to come.

2. There seems to be no particular breeding season of the panther, although its sawing and caterwauling is more frequently heard during winter and summer. The gestation period is about ninety to hundred days (Whipsnade, ninety-two days). The litter normally consists of four cubs, rarely five. Of these, generally two survive and not more than one reaches maturity. I have never come across more than two cubs at the heels of the mother. Likewise, graziers in the forest have generally found only two cubs hidden away among rocks, hollows of trees, and other impossible places.

3. Panther cubs are generally in evidence in March. They are born blind. This is a provision of Nature against their drifting away from the place of safety in which they are lodged by their mother, and exposing themselves to the danger of their being devoured by hyenas, jackals, and other predators. They generally open their eyes in about three to four weeks.

4. The mother alone rears its cubs in seclusion. It keeps them out of the reach of the impulsive and impatient male. As a matter of fact the mother separates from the male soon after mating and forgets all about their tumultuous union. The story that the male often looks in to find out how the mother is progressing with her cubs has no foundation except in what we wish it should do at least.

5. The mother carries its cubs about by holding them by the scruff of their neck in its mouth. It trains them to stalk, and teaches them how to deliver the bite of death to the prey. The cubs learn to treat all and sundry with suspicion at their mother's heels. Instinctively the cubs seek seclusion, keep to cover and protect their flanks by walking along the edge of the forest.

6. I have never had an opportunity to watch mother panther train its cubs. But in Pilibhit forests, I once saw a tigress giving some lessons to its little ones. I was sitting over its kill at Mala. As the sun set, the tigress materialized in the twilight behind my *machan*. For about an hour, it scanned and surveyed the entire area looking and listening with the gravest concern. It even went to the road where my elephant was awaiting my signal. The *mahout* spotted it from a distance and drove the elephant away.

7. When darkness descended upon the scene and all was well and safe, the tigress called its cubs by emitting a low *haa-oon*. The cubs, two in number and bigger than a full-grown cat, soon responded. They came trotting up to their mother and hurried straight to the kill in indecent haste. The mother spitted at them so furiously that they doubled back to its heels immediately. Thereafter, the mother and its cubs sat under cover about 50 feet (15 m) away from the kill to watch, wait, look, and listen. After about half an hour's patient and fidgetless vigil the mother seemed to say 'paid for'. At this signal, the cubs cautiously advanced, covering their flanks, towards the kill. No longer did they make a beeline for it, as they had done before.

8. The mother sat watching its cubs eat, and mounted guard on them. She did not partake of the meal.

On the basis of your understanding of the above passage complete the statements given below with the help of options that follow :   **1×2=2**

    (a) To protect its cubs the mother panther hides them :
        (i) among rocks   (ii) in the branches of the trees
        (iii) behind the tree trunks   (iv) at its heels

    (b) The male panther :
        (i) is protective of its cubs   (ii) trains its cubs
        (iii) watches the progress of the mother   (iv) is impulsive and impatient

Answer the following questions briefly :   **1×6=6**

    (c) How many cubs does the mother panther rarely deliver ?
    (d) What may happen if the panther cubs are not born blind ?
    (e) Why did the *mahout* drive his elephant away ?
    (f) Why did the tigress spit at its cubs ?
    (g) From the narrator's observation, what do we learn about the nature of the tigress ?
    (h) Why does the panther not face the risk of extinction ?
    (i) Find words from the passage which mean the same as each of the following :   **1×2=2**
        (i) moving aimlessly (para 3)   (ii) came down / fell (para 7)

Q.3. **Read the passage given below :**   **8**

People tend to amass possessions, sometimes without being aware of doing so. They can have a delightful surprise when they find something useful which they did not know they owned. Those who never have to change house become indiscriminate collectors of what can only be described as clutter. They leave unwanted objects in drawers, cupboards and attics for years in the belief that they may one day need them. Old people also accumulate belongings for two other reasons, lack of physical and mental energy, and sentiment. Things owned for a long time are full of associations with the past, perhaps with the relatives who are dead, and so they gradually acquire a sentimental value. Some things are collected deliberately in an attempt to avoid wastage. Among these are string and brown paper, kept by thrifty people when a parcel has been opened. Collecting small items can be a mania. A lady cuts out from newspapers sketches of model clothes that she would like to buy if she had money. As she is not rich, the chances are that she will never be able to afford such purchases. It is a harmless habit, but it litters up her desk. Collecting as a serious hobby is quite different and has many advantages. It provides relaxation for leisure hours, as just looking at one's treasure is always a joy. One doesn't have to go out for amusement as the collection is housed at home. Whatever it consists of – stamps, records, first editions of books, china – there is always something to do in connection with it, from finding the right place for the latest addition to verifying facts in reference books. This hobby educates one not only in the chosen subject, but also in general matters which have some bearing on it. There are other benefits also. One gets to meet like-minded collectors to get advice, compare notes, exchange articles, to show off one's latest find. So one's circle of friends grows. Soon the hobby leads to travelling, perhaps a meeting in another town, possibly a trip abroad in search of a rare specimen, for collectors are not confined to one country. Over the years one may well become an authority on one's hobby and will probably be asked to give informal talks to little gatherings and then, if successful, to larger audiences.

(a) On the basis of your understanding of the above passage make notes on it using headings and sub-headings. Use recognizable abbreviations (wherever necessary-minimum four) and a format you consider suitable. Also supply an appropriate title to it. **5**

(b) Write a summary of the passage in about 80 words. **3**

SECTION – B   WRITING SKILLS (30 Marks)

Q.4. You need to buy a flat. Draft a suitable advertisement in about **50** words to be published in the classified columns of a local newspaper giving all the necessary details of your requirement. You are Karan/Karuna, M114, Mall Road, Delhi. **4**

OR

Sunrise Global School, Agra is going to organize a one-act play competition in the school auditorium. You have decided to invite noted stage artiste, Nalini to grace the occasion. Draft a formal invitation for her in about **50** words. You are Karuna/Karan, Cultural Secretary.

Q.5. Park Lane, Chanakyapuram, Mysore is proud of having four reputed public schools in close proximity to each other. In the morning and afternoon there is a heavy traffic along the road and hundreds of students are put to a lot of inconvenience. Write a letter in **120-150** words to the Deputy Commissioner of Police (Traffic) describing the problem. Suggest a few measures to regulate the traffic. You are Karuna Shetty / Karan Kumar, Principal, Sunrise Global School. **6**

OR

Write an application (including a resumè) in **120-150** words for the post of receptionist advertised in a national newspaper by JKL Publishers, Peshwa Road, Pune. You are Karuna, M114, Mall Road, Pune, a graduate from SNDT University and have done a Secretarial Practice Course from YWCA, Mumbai.

Q.6. 'Rising prices can be controlled only by the government.' Write a debate in **150-200** words either for or against the motion. **10**

OR

Write a speech in **150-200** words on the topic, 'Library plays an important role at school'. It is to be delivered in the morning assembly. You are Karuna/Karan, Head Girl/Head Boy.

Q.7. India is a land of diversity. One way in which it makes us feel proud of it is the number of festivals we enjoy. Write an article in **150-200** words on 'Festivals of India' . You are Karuna/Karan. **10**

OR

Rising pollution, fast and competitive lifestyle, lack of nutritious food etc. have caused health woes for a large section of our population. Providing health care used to be a charitable and ethical activity. Today it has become commercialized, a money spinning business. Write an article in **150-200** words on 'How to provide proper health care to the common man'. You are Karan/Karuna.

SECTION – C LITERATURE : TEXT BOOKS AND LONG READING TEXT (40 Marks)

Q.8. Read the extract given below and answer the questions that follow : **4**

Its loveliness increases, it will never
Pass into nothingness; but will keep
A bower quiet for us, and a sleep
Full of sweet dreams, and health, and quiet breathing.

(a) Whose loveliness will keep on increasing ? **1**
(b) Identify the phrase which says that 'it' is immortal. **1**
(c) What is a 'bower' ? **1**
(d) Why do we need sweet dreams, health and quiet breathing in our lives ? **1**

OR

Old
familiar ache, my childhood's fear,
but all I said was, see you soon,
Amma,
all I did was smile and smile and
smile… … …

(a) What does the phrase, 'familiar ache' mean ?   **1**

(b) What was the poet's childhood fear ?   **1**

(c) What do the first two lines tell us about the poet's feelings for her mother ?   **1**

(d) What does the repeated use of the word, 'smile' mean ?   **1**

Q.9. Answer any **four** of the following in **30 – 40** words each :   **3×4 = 12**

(a) Why was the peddler amused at the idea of the world being a rattrap ?

(b) Why did Gandhiji agree to a settlement of mere 25 percent ?

(c) Aunt Jennifer's efforts to get rid of her fear proved to be futile. Comment.

(d) What does Stephen Spender want to be done for the children of the school in a slum ?

(e) How did the ten-day-old baby (the future Tiger King) react to the prediction about his future made by the astrologers ?

(f) Why was Dr. Sadao not sent abroad along with the troops ?

Q.10. Answer the following question in **120 – 150** words :

Our language is part of our culture and we are proud of it. Describe how regretful M. Hamel and the village elders are for having neglected their native language, French.   **6**

OR

Teachers always advise their students to dream big. Yet, the same teachers in your classrooms find fault with Sophie when she dreams. What is wrong with Sophie's dreams ?

Q.11. Answer the following question in **120-150** words:

Derry sneaked into Mr. Lamb's garden and it became a turning point in his life. Comment.   **6**

OR

How did Jo want the Roger Skunk story to end? Why ?

Q.12. Answer the following question in **120-150** words:

What do we learn about Mrs. Hall and Griffin from their first interaction at Coach and Horses inn ?

6

Q.13. Answer the following question in **120-150** words :

Everyone who comes into contact with Griffin suffers. Attempt a character sketch of Griffin in the light of this remark.   **6**

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Half Yearly Examination 2016 – 17

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

Q.1   "Management is the process of getting things done". State the meaning of the term "process" used in this statement.   **1**

Q.2   Give the meaning of "Authority" as an element of delegation.   **1**

Q.3   What is the meaning of "orientation" as a step in the process of staffing?   **1**

Q.4   To make the annual function of the school successful the principal of the school divided all the activities in to task groups each dealing with a specific area like rehearsals, decoration, stage management, refreshment etc. Each group was placed under the overall supervision of a senior teacher. Identify the function of management performed by the principal in doing so.   **1**

Q.5   Besides the Investment decision the finance function is concerned with two other broad decisions. Name the decisions.   **1**

Q.6   Sona transport company, specializes in transporting fruits and vegetables. It has a good reputation in the market as it delivers the fruits and vegetables at the right time and at the right place. State with reason whether the working capital requirements of "Sona Transport Company" will be high or low. Give one reason.   **1**

Q.7   Which marketing concept aims is to increase profits through economics of scale?   **1**

Q.8   The final appeal against the district forum order on be heard in which forum.   **1**

Q.9   How the "Market Related Factors" affects the choice of channels of distribution? Explain.   **3**

Q.10 Mudit was working as a supervisor with "Nitin Purifier Ltd." which was producing water purifiers. The target of company was to produce 400 water purifiers every day. His job was to make sure that work goes on smoothly and there was no interruption in production. To achieve this, he always gives order and insists that they are obeyed. He believes that reward or punishment both can be given depending upon the performance. Identify and explain the leadership style being adopted by Mudit?   **3**

Q.11 Distinguish between capital market and money market on the basis of the followings :-
(i)   Participants   (ii)   Instruments   **1½+1½=3**

Q.12 Workers of a factory frequently seek the guidance of the production manager. The production manager finds himself overburdened. Advise the way to relieve the production manager?   **3**

Q.13 When is Financial Leverage considered favorable?   **3**

Q.14 "Every management has its own unique way of managing things and people, do you agree. Give reason.
                                                                                                                                                     1+3=4

Q.15 Explain how does the understanding of business environment help the management in the following:
(i)   Tapping useful resources   (ii)   Coping with rapid changes   **2+2=4**

Q.16 One of the principles of management emphasizes that to make the employees learn the "best method" of production, training the workers is essential. It further emphasizes that each person should be scientifically selected and the work assigned to the employees should suit their physical, mental and intellectual capabilities.
(i)   Name and explain the principle of management involves.
(ii)   Name values emphasized by following the principle in part (i) above?   **2+2=4**

Q.17 Name the types of plans required for following and explain.
(i)   Defines do's and dont's for managers.
(ii)   Diversification of business.
(iii)   Launch of New product Mix.
(iv)   Launch of a New product.   **1+1+1+1=4**

Q.18 A public transport corporation has hired 500 buses for the different routes for the passengers of a metropolitan city. Most of the 3000 crew of these buses have been found to be wanting in satisfactorily dealing with public and daily commuters. They seem to the little interested in the job and the job seems to have lost all meaning to them.

(i)   As manager of company, what measures do you suggest to improve the working of crew in question.

(ii)   Is it possible to modify their behavior by planning a suitable type of training? Suggest one.

2+2=4

Q.19   State any four factors that will affect the working capital requirements of a company.   **4**

Q.20   A company has been registered under the companies act with an authorized share capital of Rs. 1000 Crores. Its registered office is situated in Mumbai and manufacturing unit in a backward district of Karnataka. Its marketing department is situated in Hyderabad. The company is manufacturing consumer goods.

(i)   With the help of a diagram suggest a suitable organization structure for the company.

(ii)   State any three limitations of this structure.   **2+3=5**

Q.21   "Minor errors should be ignored, they can be corrected at lower levels" are you agree? Explain this statement.   **1+4=5**

Q.22   Rishi Ltd. is engaged in manufacturing electrical appliances. The company has been facing a lot of problems for the last few months because of friction between two departments ie – production department and sales department. Sales department blames production department for delayed production. However, production department blames sales department for poor sales. The force that integrates the two department is missing.

(a)   Identify the missing force in the above case and list its two characteristics.

(b)   List any two values which can be cultivated among the employees by using the force identified in (a) above?   **2+2=4**

Q.23   XL Limited was engaged in the business of food processing and selling its products under a popular brand. Lately the business was expanding due to good quality and reasonable prices. Also, with more people working, the market for processed food was increasing. New players were also coming to cash in on the new trend. In order to keep its market share in the short run, the company directed its existing work force to work overtime.

But this resulted in many problems Due to increased pressure of work, the efficiency of the workers declined. Some time the subordinates had to work for more than one superior resulting in decline efficiency. The divisions that were previously working on one product were also made to work on two more products. This resulted in a lot of overlapping and wastage. The workers were becoming undisciplined. The sprit of team work, which had characterized the company, previously was beginning to wane workers were feeling cheated and initiative was declining. The quality of the products was beginning to decline and market share was on the verge of decrease.

Actually the company had implemented changes without creating the required infrastructure.

(i)   Identify the principles of management (out of 14 given by Fayal / Taylor) that were being violated by the company.

(ii)   Explain these principles in brief.

(iii)   What steps should the company management take in relation to the above principles to restore the company to its past glory?   **2+2+2=6**

Q.24   Distinguish between primary market and secondary market on the basis of :

(i)   Participants   (ii)   Instruments   (iii)   Safety   (iv)   Expected return   **1½×4=6**

Q.25   Suman was a student of commerce in class XII. Her father was a farmer, who grew different varieties of wheat and was well versed about various aspects of wheat cultivation. He was also selects by the government for a pilot project on wheat cultivation. As a project she decided to study the feasibility of marketing good quality wheat at reasonable price. Her father suggested to her to use internet to gather costumers views and opinion. She found that there was a huge demand for organic-packed wheat. She knew that there were no predetermined specifications in case of wheat, because of which it would be difficult to achieve uniformity in the out put. To differentiate the product from its competitors, she gave it the name of "Mohan – organic- wheat" and classified it in to three different varieties namely-popular, classic and supreme, based on the quality. She felt that these names would help her in product differentiation. Explain three functions of marketing, with reference to the above paragraph.   **2+2+2=6**

Best of Luck

Roll. No. ☐   **Code No.** 12/Biology/NLCS/15

Half Yearly Examination 2016 – 17

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

General Instruction :

All Questions are compulsory.

Section A - Question No. 1 to 5 carry One Mark each.

Section B - has Question No. 6 to 10 carry Two Marks each.

Section C - has 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.

Section - A

Q.1   Mention any two events that are inhibited by the intake of oral contraceptive pills to prevent pregnancy in humans.

Q.2   When is a tumor referred to as malignant?

Q.3   Name the varieties of rice from which semi-dwarf varieties have been developed.

Q.4   Expand EFB.

Q.5   What is flavr savr?

Section - B

Q.6   (i)   Why are Drosophilla & grasspopper said to show male heterogamety? Explain.

       (ii)   Explain Female heterogamety with an example.

Q.7   What is splicing? Why is it necessary?

Q.8   What is biofortification and what are its objectives?

Q.9   Explain the role of Baculoviruses as biological control agents? Mention their importance in organic farming?

Q.10 Why are cloning vectors necessary in cloning? Name any two such vectors that are used in experiment with E.Coli.

Section - C

Q.11 Give reasons, why?

       (i)   Most Zygotes in angiosperms divides only after certain amount of endosperm is formed.

       (ii)   Groundnut seeds are albuminous while castor seeds are exaalbuminous.

       (iii)   Micropyle remains as a small pore in the seed coat of a seed.

Q.12 Name and explain the role of inner and middle walls of the human uterus.

Q.13 Why has the use of condoms increased over years? Give any three reasons.

Q.14 (i)   Sickle cell anaemia in humans is a result of point mutation Explain.

       (ii)   Write the genotypes of both the parents who have produced a sickle celled anaemic offspring.

Q.15 Differentiate between m-RNA and t-RNA?

Q.16   What is adaptive radiation. Explain with the help of a suitable example where adaptive radiation has occurred to represent convergent evolution.

Q.17   (i)   State the structure of an immunoglobulin, molecule.

        (ii)   What are interferons. Write their functions.

Q.18   (i)   How is mature insulin different from proinsulin secrete by pancreas?

        (ii)   Explain how was human functional insulin produced using r DNA technology?

        (iii)   Why functional insulin thus produced considered better than one used earlier by diabetic patients?

Q.19   (i)   Describe the characteristics a cloning vector must possess.

        (ii)   Why can't DNA pass through cell membranes? How can it be made compentent to take up recombinant DNA from medium.

Q.20   What is decomposition and describe the steps involved?

Q.21   Diagrammatically show : a mature dehisced anther   **OR**   Sectional view of mammary gland

Q.22   Differentiate between exponential and logistic growth form.

Section - D

Q.23   Nidhi read an article about the presence of harmful level of DDT in human beings. She failed to understand the reason for this and discussed this issue with her biology teacher who explained to her the reasons. Read the passage and answer the following :

        (i)   What is the reason for high concentration of DDT in human beings?

        (ii)   What is biomagnification?

        (iii)   What value is displayed by Nidhi biology teacher?

Section - E

Q.24   Describe Hardy weinbergs principles and the factors affecting it .

OR

Describe the hormonal control of menstrual cycle in humans.

Q.25   Discuss the different barriers of innate immunity?

OR

What is genetic code? Explain in detail the properties of genetic code.

Q.26   (i)   Explain the River Popper Hypothesis. Name the ecologist who proposed it.

        (ii)   What is alien species invasion. Give an example.

OR

Differentiate between :

(i)   Commensalism and ammensalism   (ii)   Mutualism and competition

*****

Half Yearly Examination 2016 – 17

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

<u>Section – A Micro -Economics</u>

Q.1 When income of the consumer increases the budget line -   1
(a) Shift to the right   (b) Shift to the left
(c) Rotates to the right towards the y axis   (d) Rotates to the left towards the y axis

Q.2 Define market equilibrium.   1

Q.3 When price of the commodity and total expenditure move in the same direction, elasticity of demand will be –
(a) equal to zero   (b) equal to one   (c) greater than one   (d) less than one

Q.4 Which of following curves indicate short period cost?   1

(a)   (b)   (c)   (d)
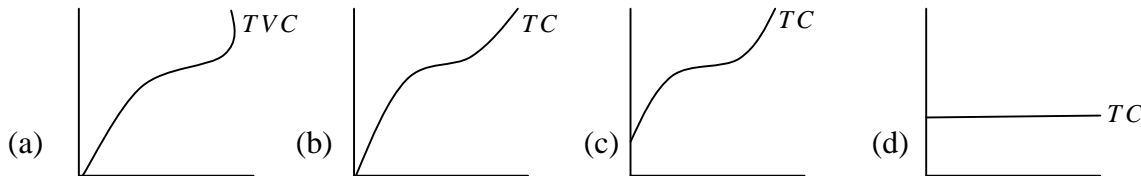
Q.5 What is meant by price ceiling?   1

Q.6 The Government offers subsidy on the mining of coal. What is its economic value in the context of production possibility curve.   3

Q.7 Explain the economic problem "for whom to produce"?   3

Q.8 How is price elasticity of demand affected by :
(i) Availability of substitutes (ii) Varity of uses of a commodity
                                    OR
How is price elasticity of supply affected by :
(i)   Nature of the commodity   (ii) Cost of production

Q.9 Explain the concept of price floor and price ceiling with help of diagram.   4

Q.10 Explain the homogenous product and differentiated product features in the context of perfect and monopolistic competition respectively.   4

Q.11 On the basis of the information given below, determine the level of output at which the producer will be in equilibrium. Use the marginal cost marginal revenue approach. Give reasons for your answer.   4

Output (Units)	Average Revenue (ì)	Total Cost (ì)
1	7	8
2	7	15
3	7	21
4	7	26
5	7	33
6	7	41

Q.12 State the main features of monopoly market and how does monopoly market structure arise, explain.   6

Q.13 Monopolistic competition includes the elements of both monopoly as well as perfect competition explain how?   6

Q.14 Suppose demand and supply curve of a commodity X is given by the following two equation simultaneously   Qd=200 – p   Qs= 50 + 2 p
(i)   Find the equilibrium price and equilibrium quantity.
(ii)   Suppose that the price of a factor of production producing the commodity has changed resulting in the new supply curve given by the equation Qs'= 80 + 2p
Analyse the new equilibrium price and new equilibrium quantity as against the original equilibrium price and equilibrium quantity.   6

Q.15 Show diagrammatically the conditions for consumer's equilibrium in Hicksian analysis of demand.   6

Section – B Macro Economics

Q.16 $\dfrac{\Delta s}{\Delta y}$ indicates :   1

(a) MPS   (b) Slope of a saving curve   (c) 1-MPC   (d) All of these

Q.17 If the value of multiplier =0, marginal propensity to save will be :   1

(a) 0   (b) 1   (c) D   (d) between 1 and D

Q.18 Define capital receipts?   1

Q.19 Which of the following is not true for Income tax :   1

(a) a direct tax   (b) an indirect tax

(c) the final burden of which cannot be shifted   (d) a transfer payment

Q.20 Which of the following is a source of revenue receipts?   1

(a) Corporation tax   (b) Donations   (c) Borrowing   (d) Both (a) and (c)

Q.21 Balance of payments always balances explain how?   3

Q.22 Distinguish between inflationary gap and deflationary gap.   3

Q.23 In an economy, the consumption function is C=230+0.7y where C is consumption expenditure and y is income. Calculate the equilibrium level of income and consumption expenditure when investment expenditure is 400.   3

Q.24 What precautions are necessary while using income method of measuring NI, give any four.   4

<div align="center">OR</div>

State the various components of compensation of employees.

Q.25 Even when float exchange rate is determined by the forces of demand and supply it can influenced by the central bank of the country. Explain how?   4

Q.26 The Government of India has recently plan to introduce GST throughout the country. How would it impact fiscal deficit of the Govt. and general price level in the country.   4

Q.27 Calculate (a) NI and (b) Personal Disposable Income.   6

	Items	Amount in (ì)
(i)	Net retained earnings of private enterprise	200
(ii)	Direct taxes paid by households	150
(iii)	Compensation of employees	1050
(iv)	Profit	550
(v)	Corporation tax	250
(vi)	Mixed income of self-employed	850
(vii)	Private income	2050
(viii)	Rent	250
(ix)	Interest	300
(x)	Net factor income from abroad	(–) 50
(xi)	Consumption fixed capital	150
(xii)	Net indirect taxes	210
(xiii)	Net exports	(–) 90

Q.28 Calculate Net National Disposable Income from the following :   6

	Items	Amount in (ì)
(i)	Net current transfers to abroad	5
(ii)	Government final consumption Expenditure	100
(iii)	Net indirect tax	80
(iv)	Private final consumption expenditure	300
(v)	Consumption of fixed capital	20
(vi)	Gross domestic fixed capital formation	50
(vii)	Net imports	(–) 10
(viii)	Closing Stock	25
(ix)	Opening Stock	25
(x)	Net factor income to abroad	10

Q.29 Explain the function of Central Bank.   6

Q.30 Explain the role of he Government can play through the budget.   6

<div align="center">*****</div>

Roll. No. ☐ ☐ ☐ ☐ ☐ **Code No.** 12/Chemistry/NLCS/43

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 What is meant by limiting molar conductivity?

Q.2 What is the significance of leaching in the extraction of aluminium?

Q.3 Write IUPAC name : (i) $K_3[Fe(C_2O_4)_3]$ (ii) $[CO(NH_3)_5Cl]Cl$

Q.4 Draw the structure of 3-Bromo-3Methyl pent-1-ene.

Q.5 Why is alkylamine more basic than ammonia?

Q.6 What is a semi conductor? Describe the two main types.

Q.7 Suggest the most important type of intermolecular interaction :
(i) n-hexane & n-octane (ii) I_2 and CCl_4

Q.8 A 1st order reaction has a rate constant 1.15×10^{-3} s^{-1}. How long will 6g of this reactant take to reduce to 3g?

Q.9 Explain the following with example : (i) Aerosol (ii) Emulsion

Q.10 Complete the equation :
(i) $MnO_4^-\left(aq.\right)+S_2O_3^{2-}\left(aq.\right)H_2O\left(l\right)\rightarrow$ (ii) $Cr_2O_7^{2-}\left(aq.\right)+Fe^{2+}\left(aq.\right)+H^+\left(aq.\right)\rightarrow$

Q.11 An element with density 10gcm^{-3} forms a cubic unit cell with edge length of 3×10^{-8} cm. What is the nature of the cubic unit cell if the atomic mass of element is 81g / mol.

Q.12 Calculate the amount of $CaCl_2$ which must be added to 500 g of water to lower its freezing point by 2k, assuming $CaCl_2$ is completely dissociated. (Kf for water=1.86 K kg / mol.)

Q.13 The rate of reaction doubles when their temperature is raised from 298 K to 308K. Calculate their activation energy. R=8.314J/mol/K. log 2=0.3010

Q.14 Describe the following :
(i) Role of cryolite in electro-metallurgy of aluminium.
(ii) Role of CO in refining of crude nickel.
(iii) Zone refining of metals.

Q.15 Explain : (i) Electrophoresis (ii) Dialysis (iii) Cogulation

Q.16 Explain : (i) Bond angle in PH_4^+ is higher than that in PH_3. Why?

(ii) PCl_5 is more covalent than PCl_3.

Q.17 Explain : (i) Zr (40) and HF (72) have almost identical radii.
(ii) Zinc is not regarded as a transition element.
(iii) Out of Cr^{3+} & Mn^{3+} which is a stronger oxidizing agent & why?

Q.18 Write the hybridization, shape & magnetic behavior :

(i) $\left[Cn\left(H_2O\right)_2\left(C_2O_4\right)_2\right]^-$ (ii) $\left[CO\left(NH_3\right)_6\right]^{3+}$ (iii) $K_2\left[Ni\left(CN\right)_4\right]$

Q.19 Write the reaction : (i) n-butyl chloride is treated with alcoholic KOH.
(ii) 2,4,6 - trinitrochlorobenzene is hydrolysed
(iii) Methyl chloride react with AgCN

Q.20 How will you convert : (i) Propan – 2 – ol to propanone
(ii) Ethanal to prepan – 2 – ol
(iii) Propene to propan – 2 – ol

Q.21 Explain : (i) The boiling point of ethanol in higher than that of Methoxymethane
(ii) Phenol is more acidic than ethanol
(iii) O - & P – Nitrophenols are more acidic than Phenol

Q.22 Write name reaction : (i)   Clemmensen reduction
                        (ii)   Hell – Volhand Zelinsky reaction
                        (iii)   Rosemund reaction

Q.23 Methanoic acid, ethanoic acid and Benzoic acid one commercially important carboxylic acid. They are used in various industries –
(i)   How will you prepare Methanoic acid?
(ii)   Write some uses of methonoic acid and ethanoic acid
(iii) How is methanol converted into ethanoic acid
(iv)   Which salt of benzoic acid is used as food preventives?

Q.24 Give reason : (a)   (i) $(CH_3)_2 NH$ is more basic than $(CH_3)_3 N$ in aqueous solution
                         (ii)   Primary amines have higher boiling point than tertiary amine.
                  (b)   Name the compound A, B & C
                         (i) $CH_3CH_2Br \xrightarrow{KCN} A \xrightarrow{LiAlH_4} B \xrightarrow{HNO_2} C$
                         (ii) $CH_3COOH \xrightarrow{NH_3} A \xrightarrow{NaOBr} B \xrightarrow{NaNO_2/HCl} C$

OR

Give one test to distinguish between the following compound :   **3+2=5**
(a)   (i)   Methylamine and dimethylamine
       (ii)   Ethylamine and aniline
       (iii) Secondary and Tertiary amine
(b) Convert :
       (i)   Aniline to 2,4,6 tribrome fluorobenzene
       (ii)   Benzylchloride to 2-Phenylethanamine

Q.25 (a) Describe the manufacture of H_2SO_4 by contact process.
     (b) predict the shape & draw structure: 2+3+=5
          (i) SO_3^{2-} (ii) ClF_3 (iii) XeF_2

OR

(a)   Draw the structure of the following molecule :   **2+1+1+1=5**
       (i) $XeOF_4$ (ii) H_3PO_3
       (ii)   Why is red phosphorus less reactive than white phosphorous?
       (iii) Which is stronger reducing agent, SbH_3 or BiH_3 & why?
       (iv) NH_3 is stronger base than PH_3. Why?

Q.26 (a)   Write nearest equation & calculate emf of cell at 298k :   **3+2=5**
       (i) $Fe(s)|Fe^{2+}(0.001m)|| H^+(1m)|H_2(g)(1bar)|Pt(s)$ Given $E°_{Fe/Fe^{2+}} = -0.44v$
       (ii) $Mg(s)/Mg2^+(0.00m)|| Cu2^+(0.0001m)/Cu(s)$ Given
              $E°_{Mg/Mg^{2+}} = -2.36v \& E°_{Cu^{2+}/Cu} = 0.34v$
   (b)   Calculate $\lambda°m$ for $CaCl_2 \& MgSO_4$
          Given $\lambda°Ca^{2+} = 119.0 scm^2 mol^{-1}$ and $\lambda°Cl^- = 76.3 scm^2 mol^{-1}$
          $\lambda°mg^{2+} = 106.0 scm^2 mol^{-1}$ and $\lambda°SO_4^{2-} = 160.0 scm^2 mol^{-1}$

OR

(i)   The molar conductivity of $0.025\ mol\ L^{-1}$ Methanoic acid is $46.15\ cm^2 mol^{-1}$. Calculate its degree of dissociation and dissociation constant. $\lambda°_{n^+} = 349.65\ cm^2 mol^{-1} \& \lambda(HCOO^-) = 54.65 cm^2 mol^{-1}$.
(ii)   What type of battery is the lead storage battery? Write the anode and cathode reaction in lead storage battery?

All The Best

Half Yearly Examination 2016 – 17

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

Question No.1 to 12 carry One Mark each.
Question No.13 to 24 carry Two Marks each.
Question No.25 to 32 carry Three Marks each.
Question No.33 to 34 carry Five Marks each.

Q.1   What is method of calculating Teams in each half?

Q.2   What do you mean Renewable Resources?

Q.3   Define Micro Nutrients.

Q.4   Explain the 'knock-knees' deformity.

Q.5   What is gross motor development?

Q.6   What is 'osteoporosis'?

Q.7   What is full form of 'AAPHERD'?

Q.8   What is 'Flexibility'?

Q.9   Define sports Medicine.

Q.10   What do you mean by 'Biomechanics'?

Q.11   What do you mean by 'Autogenic Technique'?

Q.12   What is isometric exercise?

Q.13   Write the name of the types of Tournaments.

Q.14   Write the name of types of Treakking.

Q.15   What are categories sources of proteins?

Q.16   Write any four causes of Bad posture.

Q.17   Write any four factors affecting motor development.

Q.18   Write any four reasons for less participation of women in sports.

Q.19   Explain skin fold measurements for Boy and Girl.

Q.20   What are Physiological factors determining strength?

Q.21   What is Aims of sports medicine?

Q.22   What are Factors Affecting projectile Trajectory?

Q.23   Write types of coping strategies.

Q.24   Explain the types of strength.

Q.25   Write the methods to development of speeds.

Q.26   What is motivation? Write its types.

Q.27   Explain the classification of sports Injuries.

Q.28   Write effects of exercises on respiratory systems.

Q.29   Discuss about administration of AAPHERD Youth Fitness Test.

Q.30   Write about six committees name for organization of track and field meet / sports.

Q.31   Write any six qualities of leader ship.

Q.32   Weight training is one of the oldest methods for developments of strength, what are advantages and disadvantages.

Q.33   What do you mean by nutritive components of diet? Explain it.

Q.34   Draw a fixture of 11teams on knock-out basis.

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Half Yearly Examination 2016 – 17

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

Q.1(a) What is the difference between call by value and call by reference with respect to memory location? Give a suitable example to illustrate using C++ code.   **2**

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

```
            void main ( )
{        char CH, STR [20];
         cin>> STR;
         CH=toupper (STR [O]);
         cont<<STR<< "starts with" <<CH<<endl;
}
```
1

(c) Rewrite the following C++ code after removing all the syntax error (s), if present in the code. Make sure that you underline each correction done by you in the code.

Important Note :

- Assume that all the required header files are already included.
- The corrections made by you do not change the logic of the program.

```
         typedef char [8] STR;
         void main ( )
{    Txt STR;
     gets (Txt);
     cout << Txt [0] << "\t<<Txt [2];
     cout << Txt << endline;
}
```
2

(d) Obtain the output from the following C++ program as expected to appear on the screen after its execution

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

(e) Obtain the output of the following C++ program, which will appear on the screen after its execution.

```
            class Game
{        int Level, Score;
         char Type;
         public:
         Game (char Gtype = 'P')
{        Level = 1; Score = 0;Type = Gtype;}
         void play (int GS);
         void change ( );
         void show ( )
{        cout << type << "@" << Level << endl;
         cout << Score << endl;
}};
            void main ( )
{        Game A ('G'), B;
```

```
                    B. Show ( );
                    A.Play (11);
                    A.Change ( );
                    B.Play (25);
                    A.Show ( ) ;
                    B.Show ( );
                    }
                    void Game : : change ( )
        {           Type = (Type = = 'P') ? 'G' : 'P' ; }
                    void Game : : play (int GS)
        {           Score + = GS;
                    if (Score>=30 )
                    Level = 3;
                    else if (Score > = 20)
                    Level = 2;
                    else Level =1, }
```
3

(f) Read the following and find output. Also with the Max and Min value that can be assigned the variable Taker used in the code :

```
                    void main ( )
        {           int GuessMe [4]= { 100, 50, 200, 20 };
                    int Taker = random (2)+2;
                    for (int chance = 0 ; chance < Taken ; chance ++)
                    cout << GusessMe [change] << "#";
        }
```
(i)   100 #   (ii) 50 # 200 #   (iii) 100 # 50 # 200 # (iv) 100 # 50   **2**

Q.2 (a) What is function overloading? Write an example using C++ to illustrate the concept of function overloading.   **2**

(b) Answer the Question (i) and (ii) after going through the following code :

```
                    class Hospital
        {           int Pno, Dno;
                    public :
                    Hospital (int PN);      // functional 1
                    Hospital ( );           // functional 2
                    Hospital (Hosptial 8H);// functional 3
                    void in ( ) ;           // functional 4
                    void disp ( );          // functional 5
        } ;
                    void main ( )
        {           Hospital  H [20]; // statement 1
        }
        (i)         Which of the function out of 1 to 5 will get executed when the statement 1 is executed.
        (ii)        Write a statement to declare a new object G with reference to already existing object H
                    using function 3?
```
2

(c) Define a class Tourist in C++ with the following specification :

Data members :
→ CNo – To store cab No;
→ CType – To store a character 'A', 'B', 'C' as city type
→ PerkM- To store per kilometers changes
→ Distance – to store Distance travelled (in km)
Member functions :
→ A constructor function to initialize Ctype as 'A' and CNo as '000'
→ A function Citycharges ( ) to assign per km as per following →

CType	PerKM
A	20
B	18
C	15

→ A function RegisterCab () to allow administrator to enter the value for CNo and CType Also this function should call Citychange() to assign PerKM charges.

→ A function Display ( ) to allow user to enter the value of Distance and display CNo, Ctype, PerKm, Per Km ⨯ Distance (as Amount) on screen. **4**

(d) Consider the following C++ code and answer the questions from (i) to (iv).

```
            class University
    {       long Id;
            char city [20];
            protected :
                    char country [20];
            public :
            University ( );
            void Register ( );
            void Display
    };
            class Department : private university
    {       long Dcode [10 ] ;
            char HOD [20];
            protected : double Budget;
            public  : Department ( );
            void Enter ( );
            void show ( ) };
            class student : public Department
    {       long Roll ;
            char Name [20];
            public : student( );
            void Entroll ( );
            void view ( );  }};
```

(i)   Which type of Inheritance is shown in the above example?

(ii)   Write the names of those member functions, which are directly accessed from the object of class student.

(iii) Write the names of those data member; which can be directly accessed from member functions of student.

(iv)   Is it possible to directly call function Display ( ) of class University from an object of class Department? (Answer as yes or no) **4**

Q.3 (a) Write code for a function void Evenodd (int T [ ] ,intC) in C++ to add 1 in all the odd values and 2 in all even values of the array. **3**

Eg. If the array is 35, 12, 16, 69, 26

Then o/p 36, 14, 18, 70, 28

(b) An array A [20] [30] is stored along the row in the memory with each element requiring 4 bytes of storage .if the base address of array A is 32000. Find out location of A [15] [12], also find the total no of elements present in this array. **3**

(c) Write a function AddEnd2(int A [ ] [4] , int N, int M) in C++ to find out and display the sum of all the values, which are ending with 2(i.e.units Place is 2)for example if the content of array is -

22	18	12
19	5	2

The output should be 36. **2**

(d) Evaluate the following postfix expression, show the status of stack after execution of each operation separately.

T, F, NOT, AND, T, OR, F, AND. **2**

(e) Write a function PUSHBOOK ( ) in C++ to perform insert operation on a dynamic stack, which contains Book_no and Book_Title .consider the following definition of NODE, while writing your C++ code.

```
        struct NOD
{       int Book _ No;
        char Book _Title [20];
        Node * Next;
};
```
4

Q.4 (a) Fill in the blank marked as statement L and statement 2, in the program segment given below with appropriate function for the required task :

```
        class Agency
{       int Ano,            //Agent Code
        char AName [20];    // Agent Name
        char Mobile [12] ;  // Agent Mobile
        public :
        void Enter ( ) ;// to enter details of Agent
        void Disp ( );  // To display details of agent
        int RANo ( ) { return ANo; }
        void update Mobile ( ) // func to update mobile
{       cout <, "update Mobile";
        gets (Mobile);
{
};
        Void Agentupdate ( )
{       Fstream F ; Agency A;
        F.open ("Agent Dat", ios : : binary | ios : : in | ios : : out) ;
        int updt=0;
        int UANO;
        cout <<"Ano (Agent No- is update Mobile no)";
        cin>>UANo;
        while (!updt &&f .read ((char*) & A, sizedof (A )))
{       if (A.RANo () = = UANo)
{       //Statement 1 : To call the function to update mobile no;
        --------------------------------------------------------------(statement 1)
        //Statement 2:To reposition file poster to rewrite the updated object back in the file.
         --------------------------------------------------------------(statement 2)
        F.write ((char *) & A, size of (A)); update++;
}

        }
        If (updt)
        cont << "Mobile updated for agent" << UANo << endl;
        else
        cont << "Agent not in the agency << endl;
        F. close ( );
}
```
1

(b) Write a function AECount ( ) in C++. / which should read each character of a text file. NOTES. TXT should count and display the occurrence of alphabet A and E (including small case a and e too) **2**

(c) Assuming the class TOYS as declared below, write a function in C++ to read the objects of TOYS from binary file TOYS. DAT and display those details of those TOYS which are meant for children of Age Range "5 to 8"

```
        class TOYS
{       int ToyCode
        char ToyName [10];
        char AgeRange;
        public :
        void Enter ( )
{       cin>>ToyCode;
        gets (ToyName);
        gets (AgeRange);
}
        void Display ( )
{       cout << ToyCode<< ":" <<ToyName<<endl;
        cout <<AgeRange<<endl;
}
        char * WhatAge(){ return AgeRange;}};                                    3
```

Q.5 (a) Explain the concept of Cartesian product between two tables, with the help of appropriate example.   **2**

(b) & (c) Answer the question (b) and (c) on the basis of the following tables SHOPPE and ACCESSORIES

Table : SHOPPE

ID	SName	Area
S01	ABC Computeronics	CP
S02	All Infotech Media	GK II
S03	Tech Shoppe	CP
S04	Geeks Tecno Soft	Nehru Place
S05	Hitech Tech Store	Nehru Place

Table : ACCESSORIES

No.	IName	Price	Id
A01	Mother Board	12000	S01
A02	Hard Disk	5000	S01
A03	Keyboard	500	S02
A04	Mouse	300	S01
A05	Mother Board	13000	S02
A06	Keyboard	400	S03
A07	LCD	6000	S04
T08	LCD	5500	S05
T09	Mouse	350	S05
T10	Hard Disk	4500	S03

(b) Write the SQL Alleries :

    (i)   To display IName and Prize of all Accessories in ascending order of their price.

    (ii)   To display Id and SName of all shoppe located in Nehru Place.

    (iii)   To display Minimum and Maximum Price of each Name of Accessories.

    (iv)   To display Name, Prize of all Accessories and their respective SName, where they are available.   **4**

(c) Write the output of the following SOL Commands :

    (i)   SELECT DISTINCT NAME FROM ACCESSORIES WHERE PRICE < 5000;

    (ii)   SELECT AREA, COUNT (*) FROM SHOPPE GROUP BY AREA;

    (iii)   SELECT COUNT (DISTICT AREA) FROM STORE;

    (iv)   SELECT NAME, PRICE *0.05 DISCOUNT FROM ACCESSORIES WHERE SNO   **2**
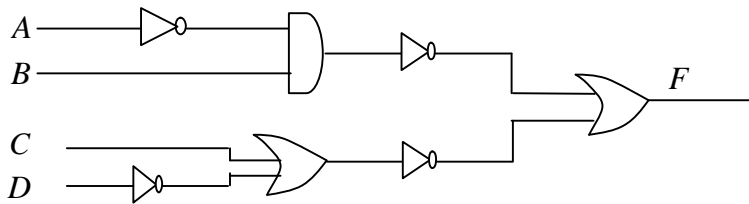   IN ('S02', 'S03');

Q.6 (a) Name the law shown below and verify it using truth table :   **2**

       $X+X'Y=X+Y$

(b) Obtain the Boolean Expression for the logic circuit shown below : **2**

(c) Write the product of sum form of the function F (x,y,z) for the following truth table **1**
representation of F :

x	y	z	F
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

(d) Obtain the minimal form for the following Booleam expression using Karnaugh's Map :
F (A, B, C, D)= Σ (1, 3, 4, 5, 6, 7, 12, 13) **3**

Q.7 (a) Write two characteristics of wifi. **1**

(b) What is the difference between E-Mail and chat? **1**

(c) Expand the following :- **1**
(i) GSM   (ii) GPRS

(d) Which type of network (out of LAN, PAN and MAN) is formed when you connect two mobiles
using Bluetooth transfer a video? **1**

(e) Tech up corporation (TUC) is a professional consultancy company. The company is planning to set
up their new offices in media with its hub at Hyderabad. As a network adviser, you have to understand their
requirement and suggest them the best available solutions, their quaries are mentioned as (i) to (iv) below :
Physical Locations of the blocks of TUC
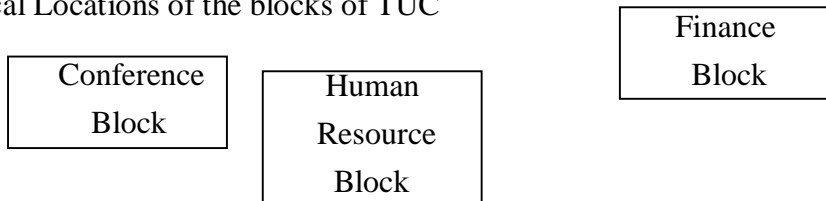
Block to Block distance (in Mtrs.)

Block (From)	Block (To)	Distance
Human Resource	Conference	60
Human Resource	Finance	120
Conference	Finance	80

Expected Number of computers to be installed in each block :

Block	Computers
Human Resource	125
Finance	25
Conference	60

(i)   What will be the most appropriate block, where TUC should plan to install their server? **1**

(ii)   Draw a block cable layout to connect all the building in the most appropriate manner for efficient
communication. **1**

(iii)   What will be the best possible connectivity out of the following you will suggest to connect the row
setup of offices in Bangalore with its London based office. **1**
(a) Infrared   (b) Satellite link   (c) Ethernet cable

(iv)   Which of the following devices will be suggested by you to connect each computer in each of the
building?

→ Gateway
→ Switch
→ Modem **1**

(f) Write names of any two popular open source software, which are used as operating system. **1**

(g) Write any two important characteristics of cloud computing. **1**

*****

Roll. No. ☐☐☐☐☐

Half Yearly Examination 2016 – 17

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

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 Value Based Question carry of Three Mark only., Question No. 24 to 26 carry Five Marks each.

Q.1   Define capacitor reactance. Write its S.I. Unit.

Q.2   What is the electric flux through a cube of side 1cm. which encloses an electric dipole?

Q.3   A concave lens of refractive index 1.5 is immersed in a medium of refractive index 1.65. What is the nature of the lens?

Q.4   Define repeater in communication system.

Q.5   Graph showing the variation of current versus voltage for a material Gaps is shown in the figure. Identify the region of Negative resistance.
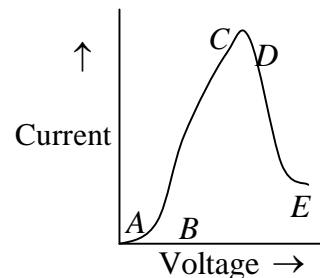
Q.6   A proton and an α particle have the same de-Broglie wavelength. Determine the ratio of their accelerating potential.

Q.7   Show that the radius of the orbit in hydrogen atom varies as n^2, where n is the principal quantum number of the atom?

Q.8   Distinguish between "intrinsic" and "extrinsic" semiconductors?

Q.9   Use the mirror equation to show that an object placed between f and 2f of a concave mirror produces a real image beyond 2f.

Q.10   Use Kirchhoff's rules to obtain conditions for the balance condition in a wheat stone bridge.

Q.11   Name the parts of the electromagnetic spectrum which is –
(i)   Suitable for radar systems used in aircraft navigation.
(ii)   Used to treat muscular strain?
(iii)   Used as diagnostic tool in medicine.
         Write in brief, how these waves can be produced.

Q.12   Draw image formation by refracting type telescope?

Q.13   Write laws of photoelectric effect.

Q.14   Define binding energy. Plot graph between binding energy per nucleon verses Atomic mass number and labeled it.

Q.15   Draw a block diagram of a detector for AM signal and show, using necessary processes and the wave forms, how the original message signal is detected from the input AM wave.

Q.16   If n cell each of emf 'E' and internal resistance r is connect in series across a variable resistor R, then find effective e.m.f. and internal resistance of cells.

Q.17   Find capacitance of capacitor when a dielectric slab of thickness t [t<<d] with dielectric constant k is put between plates of capacitor.

Q.18   (a) State working principle of a galvanometer, draw diagram and define the function of Radial magnetic field.
         (b) "It is no necessary to increase current sensitivity voltage sensitivity also increase." Justify statement.

Q.19   Define zener diode. Explain how zener diode work as voltage regulator?

Q.20 Draw a circuit diagram of a transistor amplifier in CE configuration.
Define the terms (i) Input resistance and (ii) current amplification factor. How are these determined using typical input and out put characteristics?

Q.21 Answer the following Questions :
(i) In a double slit experiment using light of wave length 600nm, the angular width of the fringe formed on a distant screen is 0.1°. Find the spacing between the two slits.
(ii) Light of wavelength 5000A° propagating in air gets partly reflected from the surface of water. How will the wavelengths and frequencies of the reflected and refracted light be affected?

Q.22 An inductor L of inductance X_L is connected in series with a bulb B and an ac source. How would brightness of the bulb change when (i) number of turn in the inductor is reduced (ii) An iron rod is inserted in the inductor and (iii) A capacitor of reactance $X_C = X_L$ is inserted in series in the circuit. Justify your answer in each case.

Q.23 A group of students while coming from the school notice a box marked. "Danger H.T. 220V" at a substation in the main street. They did not understand the utility of a such a high voltage, while they argued, the supply was only 220V. They asked their teacher this question. The next day. The teacher through it to be an important question and therefore explained to the whole class.
Answer the following questions :
(i) What device is used to bring the high voltage down to low voltage of ac current and what is the principle of its working?
(ii) Is it possible to use this device for bringing down the high dc voltage to the low voltage? Explain.
(iii) Write the values displayed by the students and the teacher.

Q.24 (i) State Ampere's circuital law. Use this law to obtain the expression for the magnetic field inside an air core toroid of average radius r, having n turns per unit length and carrying a steady current I.
(ii) An observer to the left of a solenoid of N turns each of cross section area A observes that a steady current I in it flows in the clockwise direction. Depict the magnetic field lines due to the solenoid specifying its polarity and show that it acts as a bar magnet of magnetic moment m=NIA


OR

(i) Define mutual inductance and write its S.I. units.
(ii) Derive an expression for the mutual inductance of two long co-axial solenoids of the same length wound one over the other.
(iii) In an experiment, two coils C_1 and C_2 are placed close to each other. Find out the expression for the e.m.f. induced in the coil C_1 due to change in the current through the coil C_2.

Q.25 (i) Using Huygens's construction of secondary wavelets explain how a diffraction pattern is obtained on a screen due to a narrow slit on which a monochromatic beam of light is incident normally.
(ii) Show that the angular width of the first diffraction fringe is half that of the central fringe.
(iii) Explain why the maxima at $\theta = \left(n + \dfrac{1}{2} \right) \dfrac{\lambda}{a}$ become weaker and weaker with increase n.

OR

(i)   A point object O is kept in a medium of refractive index n_1 is in front of convex spherical surface of radius of curvature R which separates the second medium of refractive index n_2 from the first one, as shown in the figure.
Draw the ray diagram showing the image formation and deduce the relationship between the object distance and the image distance in terms of n_1, n_2 and R.
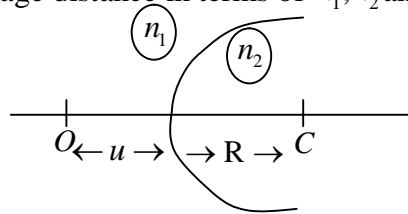
(ii)   When the image formed above act as virtual object for a concave spherical surface separating the medium n_2 from n_1 $(n_2 > n_1)$. Draw this ray diagram and write the similar relation. Hence obtain the expression for the lens maker's formula.

Q.26   (i)   An electric dipole of dipole moment $\vec{P}$ consists of point charges $+q$ and $-q$ separated by a distance 2a apart. Deduce the expression for the electric field $\vec{E}$ due to dipole at a distance x from the centre of the dipole on its axial line in terms of the dipole moment $\vec{P}$. Hence show that in the

limit $x >> a$. $E \rightarrow \dfrac{2\vec{P}}{4\pi \in_0 x^3}$.
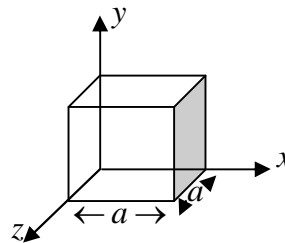
(ii)   Given the electric field in the region $\vec{E} = 2x\hat{i}$, find the net electric flux through the cube and the charge enclosed by it.

OR

(i)   Define electrostatic potential at a point. Write its SI Unit.

(ii)   Three point charges q_1, q_2 and q_3 are kept respectively at point A, B, and C as shown in figure. Derive the expression for the electrostatic potential energy of the system.
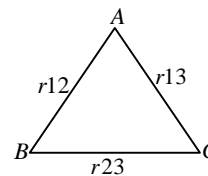
(iii)   Depict the equipotential surfaces due to –
(a) An electric dipole   (b) Two identical positive charges separated by a distance.

Best of Luck

Half Yearly Examination 2016 – 17

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

General Instruction :   All Questions are compulsory.

This Question paper contains 29 Questions. Question No. 1 to 4 in section **A** are VSA carrying **One** mark each. Question No. 5 to 12 in section **B** are SA-I carrying **Two** marks each. Question No. 13 to 23 in section **C** are LA-I carrying **Four** marks each. Question No. 24 to 29 in section **D** are LA-II carrying **Six** marks each.

Section – A

Q.1   If $f : R \to R$ be given by $f(x) = (3 - x^3)^{1/3}$ then $f 0 f(x)$ is…….. ?

Q.2   If A, B are symmetric matrices of same order then AB – BA is a ………. ?

Q.3   In a triangle OAC, If B is the midpoint of side AC and $\overrightarrow{OA} = \vec{a}, \overrightarrow{OB} = \vec{b}$ then what is $\overrightarrow{OC}$.

Q.4   Let $*$ be a binary operation of N given by $a * b = \text{LCM}(a,b)$ for all $a,b \in N$, find $5 * 7$.

Section – B

Q.5   Write the value of $\cos^{-1}\left(-\dfrac{1}{2}\right) + 2\sin^{-1}\left(\dfrac{1}{2}\right)$.

Q.6   If $A^T = \begin{bmatrix} 3 & 4 \\ -1 & 2 \\ 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 2 & 1 \\ 1 & 2 & 3 \end{bmatrix}$ find the $A^T - B^T$.

Q.7   Find K so that $f(x) = \begin{cases} \dfrac{K \cos x}{\pi - 2x} & if \quad x \neq \dfrac{\pi}{2} \\ 3 & if \quad x = \dfrac{\pi}{2} \end{cases}$ is continuous at $x = \dfrac{\pi}{2}$.

Q.8   Find the approximate value of $f(2.01)$ where $f(x) = 4x^2 + 5x + 2$.

Q.9   Evaluate the integrals $\displaystyle\int_0^\pi \dfrac{x\,dx}{1 + \sin x}$.

Q.10 Write the solution of the differential equation $\dfrac{dy}{dx} = 2^{-y}$.

Q.11 Let $\vec{a} = \hat{i} + 4\hat{j} + 2\hat{k}, \vec{b} = 3\hat{i} - 2\hat{j} + 7\hat{k}$ & $\vec{i} = 2\hat{i} - \hat{j} + 4\hat{k}$. Find a vector $\vec{d}$ which is perpendicular to both $\vec{a}$ and $\vec{b}$ and $\vec{c}.\vec{d} = 27$.

Q.12 Find the equation of a plane passing through the point P (6,5,9) and parallel to the plane determined by the points A (3, – 1, 2), B (5, 2, 4) and C (– 1, – 1, 6).

Section – C

Q.13 If $A = \begin{bmatrix} 1 & -2 & 3 \\ 0 & -1 & 4 \\ -2 & 2 & 1 \end{bmatrix}$ find $(A')^{-1}$.

Q.14 Find all points of discontinuity of – $f(x) = \begin{cases} |x| + 3 & if \quad x \leq -3 \\ -2x & if \quad -3 < x < 3 \\ 6x + 2 & if \quad x \geq 3 \end{cases}$.   **OR**

If the function f is defined by $f(x)\begin{cases} \dfrac{1-\cos 4x}{x^2} &, & x < 0 \\ a &, & x = 0 \\ \dfrac{\sqrt{x}}{\sqrt{16+\sqrt{x}}-4} &, & x > 0 \end{cases}$ is continuous at $x = 0$. Find the value of a.

Q.15 If $(ax+b)e^{y/x} = x$ then show that $x^3 \dfrac{d^2 y}{dx^2} = \left(x\dfrac{dy}{dx} - y\right)^2$.

Q.16 Prove that the curves $x = y^2$ and $xy = K$ cut at right angles if $8K^2 = 1$.

OR

Find the intervals in which the functions f given by $f(x) = \sin x + \cos x$ $0 \le x \le 2\pi$ is strictly increasing or strictly decreasing.

Q.17 A ladder 5 m long is leaning against a wall. The ladder is pulled along the ground away from the wall at the rate of 2cm/s. How fast is its height on the wall decreasing when the foot of the ladder is 4m away from the wall?

Q.18 Find $\displaystyle\int \dfrac{1}{\sin^3 x \sin(x+\alpha)} dx$.

Q.19 Using integration find the area of the triangular resion whose sides have the equations $y = 2x+1$, $y = 3x+1$ and $x = 4$.

Q.20 Find a particular solution of the differential equation $(x+1)\dfrac{dy}{dx} = 2e^{-y} - 1$ given that $y = 0$ when $x = 0$.

Q.21 Prove that for any three vectors $\vec{a}, \vec{b}, \vec{c}, \left[\vec{a}+\vec{b}, \vec{b}+\vec{c}, \vec{c}+\vec{a}\right] = 2\left[\vec{a}, \vec{b}, \vec{c}\right]$.

Q.22 Find the value of p so that the lines $\dfrac{1-x}{3} = \dfrac{7y-14}{2p} = \dfrac{z-3}{2}$ and $\dfrac{7-7x}{3p} = \dfrac{y-5}{1} = \dfrac{6-z}{5}$ are at right angles.

Q.23 Find the equation of normal to the curve $ay^2 = x^3$ at $\left(am^2, am^3\right)$.

Section – D

Q.24 Let N denote the set of natural numbers and R be the relation on N×N defined by
(a,b) R (c,d) if ad (b+c) = bc (a+d) show that R is an equivalence relation.

OR

A binary operation $*$ is defined on the set $X = R-\{-1\}$ by $x * y = x + y + xy, \forall\ x, y \in X$ check whether $*$ is commutative and associative. Fine its identity element and also find the inverse of each element of X.

Q.25 Prove using properties of determinates :

$$\begin{vmatrix} -a\left(a^2+c^2-a^2\right) & 2b^3 & 2c^3 \\ 2a^3 & -b\left(c^2+a^2-b^2\right) & 2c^3 \\ 2a^3 & 2b^3 & -c\left(a^2+b^2+c^2\right) \end{vmatrix} = abc\left(a^2+b^2+c^2\right)^3.$$

OR

Prove that $\begin{vmatrix} 1 & 1 & 1 \\ a^2 & b^2 & c^2 \\ a^3 & b^3 & c^3 \end{vmatrix} = (a-b)(b-c)(c-a)(ab+bc+ca)$.

Q.26 Evaluate : $\displaystyle\int_0^{\pi/2} \dfrac{x\sin x \cos x}{\sin^4 x + \cos^4 x} dx.$ **OR**

Evaluate the following definite integral as limits of sums. $\displaystyle\int_0^4 \left(x+e^{2x}\right)dx$.

Q.27   Find the area of the region enclosed between the two circles $x^2 + y^2 = 4$ and $(x-2)^2 + y^2 = 4$.

Q.28   In a culture, the bacteria count is 1,00,000. The number is increased by 10% in 2 hours. In how many hours will the count reach 2,00,000 if the rate of growth of bacteria is proportional to the number present?

Q.29   The magnitude of the vector produce of the vector $\hat{i} + \hat{j} + \hat{k}$ with a unit vector along the sum of vectors $2\hat{i} + 4\hat{j} - 5\hat{k}$ and $\lambda\hat{i} + 2\hat{j} + 3\hat{k}$ is equal to $\sqrt{2}$ find the value of λ.