Half Yearly Examination 2017 – 18

Time: 3:00 Hrs.   **M. M. 90**

Q.1   What are the two accounting system to record financial transactions in the books of Account ? 1

Q.2   What is a Compound Journal Entry ?   1

Q.3   What is the meaning of Ledger ?   1

Q.4   What is a Bank Reconciliation Statement ? Any two reasons of difference between Cash Book
        and Bank Pass Book Balance.   2

Q.5   What is the Contra Entry ? Explain with example.   2

Q.6   What are the types of Accounting Vouchers ?   2

Q.7   Prepare Opening Entry from following balances   2
        Creditor 15,000 ; Machine 40,000 ; Debtor 2,000; Capital 60,000; Bills Receivable 25,000;
        Cash 18,000; Bills Payable 25,000; Loan from Bank 12,000   2

Q.8   Find out cost of goods sold : Opening Stock 40,000; Purchases 1,00,000; Direct expenses 20,000
        Closing Stock 30,000. Purchases Return 10,000   2

Q.9   Classify the following accounts In Income, Expenses, Assets, Liabilities and Capital   3
        [a] Capital   [b] Prepaid Rent   [c] Commission received in Advance
        [d] Carriage   [e] Bank Loan   [f]Copy Right

Q.10   Define the following basic accounting terms with example   3
        [a] Revenue   [b] Drawing   [c] Profit

Q.11 Write down any four differences between Cash Basis and Accrual Basis of Accounting.   3

Q.12 Explain of the following   4
        [a] Business Entity Concept   [b] Matching Concept
        [c] Consistency Concept   [d] Dual Aspect Concept

Q.14 Define personal account and nominal account and write debit and credit rules for both.   4

Q.15 On 1st Jan. 2016 a firm bought a machine for 5,70,000 and spent 36,000 on its installation and
        24,000 on its carriage. Estimated life of the machine 10 years and estimated scrap value of
        machine 1,20,000. Find the amount of depreciation and prepare machine account for two years?4

Q.16 From the following Ledger Balances prepare Trial Balance   6

Capital	41,600	Rent Outstanding	2,840
Purchase	20,000	Sales	30,000
Amount due to Krishna	30,000	Drawings	5,600
Trade Mark	24,000	Interest Received	4,000
Discount received	3,160	Amount due from Kuldeep	52,000
Cash Balance	10,000	Machine	10,000

Q.17 From the following particulars, prepare s Sales Book of M/s Sumit , Bombay dealers in stationery
        and post these transactions into the ledger accounts.   6

        July 1   Sold to M/s Stationery Mart
                           50 Dozen pencil @ 10 per pencil
                           100 Dozen Inkpot @ 120 per Dozen
                           Less 10% Trade Discount
        July 5   Sold to M/s Pustak Mahal Jaipur
                           200 Drawing Boards @ 70 per piece
                           10 Gross Pen @ Rs 100 per Dozen
        July 10   Sold old newspaper for Cash 1000

July 20	Sold to M/s ABC and sons
	100 Copies Accountancy @ 200 per copy
	200 Copies Economics @ 150 per copy
	50% amount received by cheque
July 25	Sold to M/s Patel and company
	4 office Tables @ 200 per table
	5 chairs @ 250 per chair

Q.18 Prepare an Accounting Equation on the basis of the following transactions   6

1- Started business with cash 70,000 and furniture 10,000
2- Paid rent in advance 500
3- Purchased goods for cash 30,000 and credit 20,000 on 5 % Trade Discount
4- Sold goods for cash 30,000 costing 20,000
5- Paid salary 500 and salary outstanding being 100
6- Bought furniture for personal use 5000

Q.19 Prepare a Bank Reconciliation Statement from following information   6

[1] Pass book shows credit balance 20,000
[2] Cheque deposited in to the bank but not collected by bank 5,000
[3] Divided collected by bank 1500 but not entered in cash book
[4] Cehque of 9200 were issued of which 2200 were presented for payment on 15 April
[5] Pass book deposit column total under cast by 2000
[6] Cheque issued 1600 but entered debit side of cash book

Q.20 Record the following transactions in a Double Column Cash Book with Cash and Bank Columns and balance the book on 31st March 2016.   8

March 1- Cash in hand 50,000, Cash at Bank 12,000
March 2- Pays in to Bank 30,000
March 3- Received cehque from Rama and Company 800
March 4- Goods sold to Suresh 40,000 and 5% T.D. and 5 % C.D.
March 5- Withdrew cash from bank for private use 240
March 10 Withdrew cash from bank for office use 2000
March 11 Paid to Sumit on Account 1,000
March 15- Received cheque from Kamla 595 and discount allowed 25
March 20- Kamla's cheque endorsed to Bhushan in full settlement of her account Rs 650
March 29 Paid bills payable by cheque 1,000
March 30 Deposited in to bank, balance of cash in excess of 1000

OR

Prepare Double Column Cash Book of Jain Ltd. Of January 2016.

Date	Transactions
01	Cash in Hand Rs. 3600. Bank Overdraft Rs.1000
07	Cheque received from Rajesh Rs.4200 and deposited in the bank same day.
09	Paid in to bank Rs.1800
14	Jagdish who owed from jain Ltd. By Rs.500 become insolve only 50% amount paid.
18	Withdrawal from bank for personal use Rs.800
25	Received Rs.4000 from Lalit and out of it deposited in to the bank Rs.3500
28	Rajesh cheque dishonoured & Bank charged Rs. 300 for this.

Q.21 Enter the following transactions in the Journal of Suresh who trades in Furniture   12

April 1-   Business started with Cash 50,000; Machine 1,00,000; Building 2,50,000

April 5   Furniture purchased from Ram 30,000 on 5%Trade Discount

April 7   Goods sold to Suresh 50,000 on 5% Trade discount and 5% Cash discount

April 10   Furniture sold to Mohit 20,000 on 5% Cash Discount and 50% amount received by cheque

April 14   Cheque received from Sunil and endorsed to Anil 5000

April 20   Personal car sold 50,000 and 30,000 introduced in business

April 22   Furniture sold to Manish 10,000 on 5% trade discount

April 25   Cheque received from Manish 9200 in final settlement and deposited into the bank

April 26   Cash 2000 and furniture 1000 withdrawn for personal use

April 29   Sohan is declared insolvent and received from his official receiver a dividend of 60 paise in the rupee on a debts of 1000

April 30   Interest allowed on capital 10%

April 30   Depreciation charged on Building 5%

Q.22 Prepare following ledger account from above Journal   4

     (a)   Cash Account   (b) Sales Account

Q.23   1st April 2009 Machine Purchase 60, 000

1st Oct. 2009 Machine Purchase 40,000

1st July 2010 Sale of first Machine 50,000

31st March 2011 Purchase 80,000

1st January 2012 Sale of Second Machine 30,000

Depreciation charged 10% P.A. Depreciation charged by Written down value method.

Year Ending 31st March   8

OR

Prepare machine account for years from following information's

01-04-2012   Purchase machine Rs.2,00,000

01-10-2012   Purchase second machine Rs.5,00,000

30-09-2013   Sold second machine Rs.3,50,000

01-12-2014   Purchase third machine Rs.6,00,000

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

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Roll. No. [ ]

Half Yearly Examination 2017 – 18

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 Four
Mark only, Question No. 24 to 26 carry Five Marks each.

Q.1 A vehicle moving with a speed of 18 Km/h. Covers _____ m in 1 Sec.

Q.2 Can a body have constant speed and still have a varying velocity. Explain.

Q.3 When is the magnitude of $\left(\vec{A}+\vec{B}\right)$ equal to the magnitude of $\left(\vec{A}-\vec{B}\right)$.

Q.4 A thief jumps from the upper storey of a house with a load on his back. What is the value of force of the load on his back when the thief is in air?

Q.5 Why do we prefer to use a wrench or screens driver of longer arm?

Q.6 If two resistor of resistance $R_1 = (100 \pm 3)\Omega$ and $R_2 = (200 \pm 4)\Omega$ are connected in parallel. Find the equivalent resistance of the parallel combination.

Q.7 If in case of motion, displacement is directly proportional to the square of the time elapsed, what do you think about its acceleration. Its variable or constant? Explain why?

Q.8 Find the angle between the vectors $\vec{A} = \hat{i} - 2\hat{j} - \hat{k}$ and $\vec{B} = -\hat{i} + \hat{j} + 2\hat{k}$.

Q.9 Friction is a necessary evil comment on this statement?

Q.10 Prove that the rate of change of angular momentum is equal to torque acting on it.

Q.11 Discuss the Newton's Law of motion.

Q.12 What is movement of inertia of a rod of mass M, length l about an axis perpendicular it through one end?

Q.13 State and prove parallel axis theorem.

Q.14 Each side of a cube is measured to be 7.203 m. what are the total surface area and the volume of the cube to appropriate significant figures?

Q.15 If density f, acceleration due to gravity g and frequency v are the basic quantities, find the dimensions of force.

OR

Find the value of 100 joule on a system which has 20 cm, 250gm and half minute as fundamental unit of length, mass and time?

Q.16 Deduce the following equation of motion for uniform accelerated motion by using calculous method –

(i) v=u+at   (ii) s=ut + $\frac{1}{2}$at^2 (iii) v^2=u^2+ 2as.

Q.17 A Cricketer can throw a ball to a maximum horizontal distance of 100m. How much high above the ground Cricketer throw the same ball.

Q.18 Why is it easier to pull a lawn roller than to push it? Explain.

Q.19 A stone when thrown on a glass window smashes the windowpane to pieces, but a bullet from the gun passes through making a clean hole. Why?

Q.20 If $\left|\vec{A}+\vec{B}\right| = \left|\vec{A}-\vec{B}\right|$, find the angle between $\vec{A}$ and $\vec{B}$.

Q.21 Two towns A and B are connected by a regular bus service with a bus leaving in either direction every T min. A man cycling with a speed of 20 km / h in the direction A to B notice that a bus goes past him every 18 min in the direction of his motion and every 6 min is opposite direction. What is the period T of the bus service and with what speed do the buses ply on the road?

Q.22 The velocity time relation of an electron starting from rest is given by $v = kt$, where $k = 2m/s^2$. Calculate the distance travelled in 3sec.

Q.23 Ramesh was travelling along with his father in a train. When the train was moving fast, Ramesh look out of the window of the train. To his surprise, he found that the nearby trees, houses, lamp-posts etc. seem to move rapidly in a direction opposite to the train's motion while the distant object such as hill top, moon etc. seem to stationary out of shear enthusiasm, he asked his father, who was a Science teacher, to explain him the reason behind this observation. He gave the explanation of the phenomenon in detail. Answer the following question based on the above information.
(i)   What are the value being displayed by Ramesh here?
(ii)   Name the phenomenon involved in the above observation.
(iii) Explain the above observation clearly.

Q.24 Determine the coordinates of the centre of mass of a right circular solid cone of base radius R and height h.

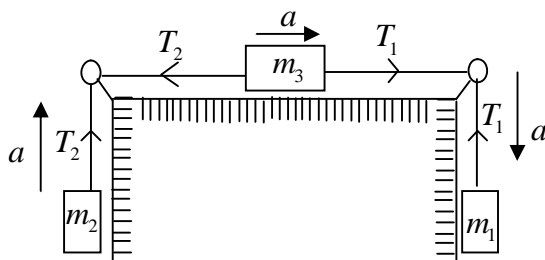<center>OR</center>

Derive an expression for the moment of inertia of a uniform solid sphere about its any diameter.

Q.25 What is meant by banking of roads? What is the need for banking a road? Obtain an expression for the maximum speed with which a vehicle can safely negotiate a curved road banked at an angle θ.The coefficient of friction between the wheels and the road μ.

<center>OR</center>

Find out the tension and acceleration in given diagram.

Q.26 A projectile is fired upward at an angle θ with the horizontal with velocity u. Show that its trajectory is a parabola. Obtain expression for –
(i)   Maximum height attain   (ii)   Time of flight   (iii)   Horizontal range
        At what value of θ is the range maximum?

<center>OR</center>

Define centripetal acceleration. Derive an expression for the centripetal force of a body moving with uniform speed v along a circular path of radius r. Also find this for u in terms of angular velocity w.

<center>******</center>

Half Yearly Examination 2017 – 18

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

General Instructions :

      Section – A Reading   20

      Section – B Writing & Grammar   30

      Section – C Literature & Long Reading   30

      Section – D Listening skills & Speaking skills   20

Section – A Reading

A.1   Read the following passage carefully :

LEAVE NO TRACE

      If you were ever a girl Scout or a boy Scout as a kid, you learned about leave no trace & preserving the purity of outdoors. There are seven simple tips to remember. Firstly know what the regulations are in the area you will be camping and climbing. Prepare for any emergencies, changes in climate & other Hazards. Repackage food to minimize waste and take your trash home with you. Remember to only drive and park on trails with rock, gravel, or dry grass. Show consideration for other climbers, walkers or the landowner. In popular camping areas try to concentrate activity on trails, campsites and where vegetation is absent. In pristine areas, try to disperse the creation of campsites & trails. You should also avoid places where wear from campers is beginning to take place. There can be some exceptions to this principle of leave no trace, especially if there are only designated places to comp.

      Disposing your waste is also important. Whatever you pack in, pack it out. Inspect your campsite for trash and food. Pack out all of your trash, leftover food and litter in fact, pack out any other litter that is there whether it is yours or not. Preserve & leave behind what you find. Look but don't touch cultural or historical artefacts. Do not disturb historical or cultural structures. Leave rocks & plants how you found them. Avoid introducing anything that is non-native to the area. It is important to minimize campfire impacts. Keep fires small & burn your fires completely out & scatter cooled ashes. Respect the wild life of the area by observing them from a distance and not treating them in any way. Finally be considerate to other visitors in the area.

A.1.1   Answer the Question by choosing the most appropriate option from the ones given & the Question A1.2 to A1.6 by supplying answers on the basis of your understanding of the passage.   **1×6=6**

(i)   'By leave no trace' the author means –

    (a) disappear completely   (b) leave the camping site clean

    (c) unable to find any clues   (d) no marking for the trekkers

(ii)   It is safe to drive and park on ------------ surfaces –

    (a) Durable   (b) soft   (c) unknown   (d) swampy

(iii)   To preserve the culture of the site –

    (a) The camper must study about the place   (b) Not leave behind any foreign artefact

    (c) Must adhere to regulations   (d) Must build small fires

(iv)   which of the following statements is false –

    (a) Wildlife should be fed at campsites   (b) Campers should not damage historical sites

    (c) Clear litter left by other campers   (d) Scatter cool ashes in the area

(v) Which of the following activities does not cause damage to the campsite –
(a) leaving the food and litter behind   (b) climbing historical structures
(c) scattering cooled ashes   (d) teasing wild life

(vi) In the given passage, the author doesn't talk about -

(a)   conducting researches at the campsite   (b)   Keeping the campsite neat and clean
(c)   respecting wild life   (d)   Preserving monuments

A.1.2 What preparations should one make before going on a camping trip?   **1**

A.1.3 What you pack in, pack it out' Explain.   **1**

A.1.4 What precautions should be taken regarding the camp fire?   **1**

A.1.5 Mention any two things towards which one must show one's consideration?   **1**

A.1.6 Find words from the given passage which mean the same as the following –   **2×1=2**

    (i)   dangers   (ii)   immaculately clean

A.2 Read the following passage carefully –

    Before you head to the chemist, take a critical look at your diet, especially your intake of dairy products. In urban westernized diets, dairy foods are the major sources of dietary calcium. Without them, it may be difficult to reach the recommended intake for calcium. People who exclude dairy products for the fear of heart disease, obesity are vegens or those with a milk allergy, must choose food carefully to find rich calcium sources.

    Calcium sources vary widely in their bio-availability the proportion of a substance capable of being absorbed and available for use or storage. Although several sources of natural calcium are known and labels are required to list the percent daily value for calcium, they do not indicate how much of that calcium the body will absorb. For example, half a cup of spinach contains about 120 milligrams of calcium, but the body absorbs only five percent of that calcium.

    Intake recommendation are therefore based on the 'mix of sources' in the typical diet of a country. Many cultures manage on much lower intakes because they do not consume the food that deplete calcium or reduce its absorption. Vegetarians may, infact, needless calcium than meat eaters. If you are considering non-dairy foods as your sole source of calcium, however refer to the table which shows the amount of certain foods needed to provide the calcium available from one cup of milk.

    Even with adequate calcium in your diet, if you are pregnant, elderly, a smoker, menopausal or have family history of osteoporosis, you may still need to investigate the supplement. Calcium deficiencies are common in chronic dieters, women who have undergone hysterectomy, alcoholics and people who are anorexic / bulimic. Constituents of food like fibre, oxalates (spinach, rhubarb, almonds, chocolates) phytates (found in wheat bran) and alcohol, limit absorption of calcium. Excessive intakes of certain nutrients like protein, vitamin A and sodium also inhibit calcium absorption. Many common medicines including antacids, steroids, diuretics interfere with calcium metabolism.

A.2.1 Answer the following Questions :   **5**

    (i)   On the basis of your reading of the above passage make notes on it in points only, using headings & sub-headings (min. four). Use recognizable abbreviations wherever necessary. Also suggest a suitable title.

    (ii)   Write a summary of the passage in not more than 80 words using the notes made.   **3**

Section – B Writing & Grammar

B.3 You are Sunny / Suman, Secretary of the Dramatic Club. This Dramatic Club of your school is staging William Jacob's famous play 'The monkey's Paw'. Draft a notice inviting students to audition for the roles, giving the relevant details. **4**

OR

As a Manager of 'Excellent Coaching Centre' run by you, prepare a poster calling the attention of students desirous of attending IIT and CMPT coaching to join your coaching centre.

B.4 Walter D'Souja sees the following advertisements. He has five years experience of teaching IELTS. He wants to apply for the job. Write his job application. **6**

OR

> **Urgent Required**
> IELTS teachers male / female, Attractive salary. Send resume before 15th October, 20__ Inderdev Institution, Lal Chowk, Yamunanagar
> Director

You are Geeta Verma of 346, Katputli Bazar, Allahabad. Many manholes in streets of the city are causing accidents. After many requests there is no any action on the part of the Municipal committee. Write a letter to the Editor of 'Hindustan Times', New Delhi drawing the attention of the concerning authorities towards this.

B.5 Your School celebrated the Teacher's day. As Namita, Head Girl of the school, write a report for the school magazine. **10**

OR

There is an Inter Declamation Contest in your school. You have to participate in that contest. Prepare your speech on the topic 'Games and Sports' be compulsory in schools. You are Raghav / Ragini of XI Com.

B.6 The following passage has not been edited. There is one error in each line. Write the incorrect word and the correction in your answer sheet. The first one has been done for you. **1×6=6**

Stories about detectives did not became truly	became	become
Popular. However, the publication for	----------	----------
A study in Scarlet, introducing to Britain & the	----------	----------
World the more famous detective	----------	----------
Of all times, Sherlock Holmes. After some second	----------	----------
Novel, Holmes's adventures truly became a nation	----------	----------
addiction when they appears as monthly short stories	----------	----------
In strand magazine.		

B.7 Rearrange the following jumbled words in meaningful sentences – **1×2=2**
   (i)   some / a / ant / grain / grasshopper / appealed / to give him / to an
   (ii) unhappiness / root cause / discontentment / of all / is the

B.8 Correct the following sentences and write them in the space provided : **1×2=2**
   (i)   If I was you I would never have committed this mistake.
   (ii) None of my friend are applying for this job.

Section – C Literature & Long Reading

C.9   Read the extract given below and answer the questions that follow :   **1×3=3**

And the sea, which appears to have changed less,

Washed their terribly transient feet:

(i)   Pick the poetic device used in these lines…

(ii)   Explain "terribly transient feet".

(iii)   Why has poet described the transience as terrible?

C.10   Answer any three of the following questions :   **3×3=9**

(i)   Describe the grandmother's physical looks.

(ii)   "The author proved himself to be the best captain". Support the statement with examples from the text.

(iii)   When & where was Tut's tomb discovered?

(iv)   What type of a man was Uncle Khosrove?

(v)   Why had the narrator gone to see Mrs. Dorling?

(vi)   What are Ranga's views about marriage?

(vii)   Why did the medical certificate prove to be useless?

C.11   Answer the following :   **6**

Comment on the aptness of the title "Discovering Tut": The saga continues.

OR

Do you think what Aram & Mourad do, was stealing? Justify your answer.

C.12   Narrate briefly the arrival of the Otis family at the Canterville chase.   **6**

OR

Describe the ghost's appearance as he was spotted by the Otises.

C.13   How did the ghost plan to terrify Washington and Mrs. Otis?   **6**

OR

Never in a brilliant & uninterrupted career of three hundred years, had he been so grossly insulted. When & why did ghost feel so?

Section – D Listening skills & Speaking skills   **20**

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Half Yearly Examination 2017 – 18

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

Section – A

Q.1   Name the reserve food material in phaeophyceae group of algae?   1

Q.2   Where would you categorise an organism that maybe cellular or acellular with naked cytoplasm,

multinucleate and saprophytic in nature?   1

Q.3   At which stage of cell division, the morphology of chromosomes can be distinctly studied?   1

Q.4   Name the algal and fungal components of lichens.   1

Q.5   Which has more no. of series, a genus or a family?   1

Section – B

Q.6   "Cell is the basic unit of life". Justify this statement.   2

Q.7   (a) How are canals in canals system connect spongocoel to the outside?

(b) Sponges are filter feeders. Justify?   2

Q.8   Slides of transverse section of monocot stem and dicot stem are provided to you. How would you

differentiate them anatomically.   2

Q.9   Differentiate primary phloem and secondary phloem?   2

Q.10   What are the cellular components of blood?   2

Section – C

Q.11   Give biological name, family, order, class and phylum of man, housefly, mango and wheat?   3

Q.12   Draw different types of aestivation?   3

Q.13   What is phyllotaxy? Give one difference between racemose and cymose inflorescence?   3

Q.14   Write any four differences between collenchyma and sclerenchyma?   3

Q.15   Explain the different categories of animals based on the presence or absence of coelom?   3

Q.16   Compare the life cycle of gymnosperms with the life cycle of pteridophytes?   3

Q.17   Where do you find the following and give their function also –

(i) Gonapophysis   (ii) malphigian tubules 3

Q.18   Describe the type of photosynthetic pigments in red algae, gree algae and brown algae.   3

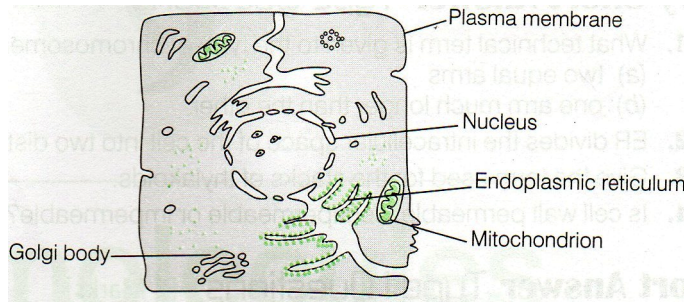Q.19   Define the term metabolism. What is its benefit for living organisms? What are its types. Explain.   3

OR

Explain the terms : (i) Herbarium   (ii) Key   (iii) Museums

Q.20   Draw a neat and well labeled diagram of mitochondria.   3

Q.21 The diagram shows some of the structures present in an animal cell.　　　　3

Which of these structures is responsible for

(i)　Manufacture of lipids and steroids　　　　　　(ii) Release of energy

(ii)　Manufacture of hormones and digestive enzymes.

(iv) Production of spindle fibres in cell division

(v) Endo and exocytosis　　　　　(vi) Passes genetic information

Q.22 Justify the following statements on the basis of external features only –

(i)　Potato is a modified stem and sweet potato is a root.

(ii)　Leaf of Hibiscus is simple and leaf of rose is compound.

(iii)　Flower is a modified shoot.

Section – D

Q.23 Vicky's mother was very concerned about his son. She always used to give him advices on how he should study, what is good for his health, and about everything. One day Vicky saw some, birds flying independently & asked his mother that ; why don't animals take care of their young one's as we humans. Her mother smiled & explained that parental care is also well developed in animals.

(i)　Explain parental care in mammals?　　　　　　　　　　　　　　　　1
(ii)　Which other animals show parental care & how?　　　　　　　　　1
(iii)　What does parental care indicate?　　　　　　　　　　　　　　　1
(iv)　What values are shown by Vicky's mother?　　　　　　　　　　　1

Section – E

Q.24 Explain different types of plastids, their pigments & functions?　　　　5

OR

Who proposed the "Fluid Mosaic model" of plasma membrane. Describe the structure of plasma membrane with a labeled diagram.

Q.25 Draw the labeled diagram of alimentary canal of cockroach.　　　　5

OR

Give difference between dorsiventral and Isobilateral leaf.

Q.26 Give a brief account of viruses with respect to their structure and nature of genetic material. Also name four common viral diseases.　　　　5

OR

Explain briefly the following terms with suitable example :

(i)　Protonema　　(ii) Antheridium　　(iii) Sporophyll　　(iv) Isogamy　(v) Diplontic

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Half Yearly Examination 2017 – 18

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

> **General Instructions :**
>
> Question No. 1 to 5 **One** Mark each. Question No. 6 to 10 **Two** Marks each.
> Question No. 11 to 22 **Three** Marks each. Question 23 Value based **Four** Marks.
> Question 24 to 26 **Five** Marks.

Q.1	Define molarity.	1
Q.2	Write the electronic configuration of element Z=118.	1
Q.3	Define octet rule.	1
Q.4	Define Boyle's law.	1
Q.5	Define system. Name various types of system.	1
Q.6	Write four properties of cathode rays.	2
Q.7	Which has higher dipole moment NH_3 OR NF_3, and why?	2
Q.8	Explain Hess's law with the help of one example.	2
Q.9	Explain Le chatelier's principle. Explain how the various factor affect.	2
Q.10	Define oxidation, reduction, oxidizing agent and reducing agent.	2

Q.11   A compound contain Na=14.31%, S=9.97%, H=6.22% and O=69.5%. Calculate the molecular formula.
The molecular mass of the compound is 322.   3

Q.12   The density of 3M solution of NaCl is 1.25 gm/ℓ. Calculate Molality of the solution.   3

Q.13   Explain (i) Dual behavior of matter (ii) Heisenberg uncertainty principle.   3

Q.14   Explain the trends in modern periodic table on the following properties.   3
(i) Ionization (ii) Electron Gain enthalpy (iii) Electro negativity

Q.15   Explain Mendeleev's periodic table & its limitation.   3

Q.16   Compare the relative stability & magnetic properties of the following species –   3

(i) O_2 (ii) O_2^+ (iii) O_2^-

Q.17   Explain kinetic molecular theory.   3

Q.18   Calculate $\Delta f H^{\ominus}$ of $CH_3OH(l)$ from the following data :   3

$$CH_3OH(L) + \tfrac{3}{2}O_2(g) \rightarrow 2H_2O(l) + CO_2(g); = \Delta H^{\ominus} = -726KJ/mol$$

$$C(g) + O_2(g) \rightarrow CO_2(g) \qquad ; \Delta CH^{\ominus} = -393KJ/mol$$

$$H_2(g) + \tfrac{1}{2}O_2(g) \rightarrow H_2O(l) \qquad ; \Delta fH^{\ominus} = -286KJ/mol$$

Q.19   For the reaction :   3
$$2A(g) + B(g) \rightarrow 2D(g)$$

$$\Delta U^{\ominus} = -10.5KJ \ and \ \Delta S^{\ominus} = -44.1J/K$$

Calculate $\Delta G^{\ominus}$ for the reaction and predict whether the reaction may occur spontaneously.

Q.20   Classify the various types of classification of acid & base.   3

Q.21   Balance the following redox reaction :   3

(i) $MnO_4^-(aq) + I^- \rightarrow MnO_2(s) + I_2(s)$ (in basic medium)

(ii) $Cr_2O_7^{2-} + SO_2(g) \rightarrow Cr^{3+}(aq) + SO_4^{2-}(aq)$ (in acidic medium)

Q.22 (i) Calculate oxidation number of underlined element : 3
(A) NaH$\underline{S}$O$_4$ (ii) Ca$\underline{O}_2$
(ii) Define standard electrode potential.

Q.23 **Air contains mainly N$_2$ and O$_2$ along with small quantities of CO$_2$. Madhu knew that CO$_2$ is heavier than N$_2$ and O$_2$. This raised a curious question in her mind and she asked her teacher. CO$_2$ is heavier than N$_2$ and O$_2$ gases, then why it does not settle down and form the lower layer of the atmosphere?4**
(i) What answer did the teacher give to Madhu to satisfy her curiousity?
(ii) What value are shown by Madhu?

Q.24 (i) Write the various laws that are followed during filling of orbital in atom. 3
(ii) Calcualte the wavelength, frequency and wave number of a light wave whose period is
2×10^{-10} s. 2

OR

(i) Explain photoelectric effect. 2
(ii) Explain emission and absorption spectrum 2
(iii) What is the total No. of orbitals associated with the principal quantum no. 1

Q.25 (i) Explain various postulates of VSEPR theory.
(ii) Explain AB$_2$E$_2$. AB$_3$E$_2$ type of geometry. 5

OR

Define Hybridisation. Explain various type of hybridisation with example.

Q.26 (i) PCl$_5$, PCl$_3$ and Cl$_2$ are at equilibrium at 500 k and laving concentration 1.59M PCl$_3$, 1.59M Cl$_2$ and 1.41MPCl$_5$. Calculate Kc for the reaction. $PCl_5 \rightleftharpoons PCl_3 + Cl_2$.

(ii) The value of Kc=4.24 at 800k for the reaction
$CO(g) + H_2O(g) \rightleftharpoons CO_2(g) + H_2(g)$
Calculate equilibrium Conc. of CO$_2$, H$_2$, CO &H$_2$O at 800k, if only CO and H$_2$O are present initially at Conc. Of 0.10M each. 5

OR

(i) Define common Ion effect.
(ii) Explain homogeneous equilibrium with an example.
(iii) Find Kc. :
(a) $2NOCl(g) \rightleftharpoons 2NO(g) + Cl_2(g)$ $Kp = 1.8 \times 10^{-2} at 120K$
(b) $CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$ $Kp = 167 \ at \ 1073K$

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Half Yearly Examination 2017 – 18

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

Very short Answer Questions carrying One Mark. [Word limit 20 to 30 words]

Q.1   What do you mean by 'Special Olympic Bharat'?

Q.2   What is 'adapted Physical Education'?

Q.3   What do you mean by 'Wellness'?

Q.4   What is 'Flexibility'?

Q.5   What do you mean by 'Olympic Movement'?

Q.6   What is 'Olympic Motto'?

Q.7   What are the 'Formula' of B.M.I.?

Q.8   What is 'Pranayama'?

Q.9   Define 'Doping'.

Q.10   Write the full-form of 'WADA'.

Q.11   Define 'Physical Activity'.

Q.12   What do you mean by 'Muscular Endurance'?

Short Answer Questions carrying Three Marks. [Word limit 80 to 90 words]

Q.13   Enlist the career options in Physical Education.

Q.14   How can Health threat be prevented through life style change?

Q.15   Discuss the main functions of I.O.C.

Q.16   Write the components of 'Yoga'.

Q.17   Enlist the performance enhancing substance.

Q.18   Discuss the various types of Physical Activity in brief.

Long Answer Questions carrying Five Marks. [Word limit 150 to 200 words]

Q.19   Define Physical Education and explain its aim and objectives in detail.

Q.20   Define Physical Fitness. Write there components in detail.

Q.21   Explain the origin of modern Olympic Games.

Q.22   What do you mean by 'Yoga'? Explain its importance in daily life.

Q.23   Elucidate the doping control procedure in detail.

Q.24   Explain any five essential element of positive sports environements.

Q.25   Briefly explain the principles of 'Adapted Physical Education'.

Q.26   What do you mean by the term 'Life Style'? Elucidate the importance of positive / healthy Life Style in detail.

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Roll. No. [ ]   Code No. 11/Economics/NLCS/98

Half Yearly Examination 2017 – 18

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

General Instructions :

1. All Questions are compulsory.
2. Marks are indicated against each Question.
3. Answer should be brief and to the point.

Section – A (Indian Economic Development)

Q.1   Railways were firstly introduced in India……. .   1

Q.2   Industrial policy of 1956 emphasized on the role of :   1

    (a)   Private Sector   (b) Public Sector   (c) Joint Sector   (d) None of These

Q.3   Which of the following is significant in India?   1

    (a)   Absolute poverty   (b) Relative poverty(c) Both (a) and (b)   (d) None of these

Q.4   Sound Human Capital requires :   1

    (a) Excellent education   (b) Professional skill(c) Sound health   (d) All of these

Q.5   What are the two main policy measures solving the agricultural problems?   3

Q.6   Give arguments in favour of privatisation.   3

Q.7   Explain four main causes of poverty in India.   4

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

Mention any four common characteristics of poor people

Q.8   How is human development is a broader term as compared to human capital?   4

Q.9   Write features of WTO.   4

Q.10 What was the main focus of economic policies pursued by the British regime in India and what
were the impact of these policies?   6

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

Were there any positive contribution made by British in India. Discuss.

Q.11 What measures have been taken for globalization of Indian Economy?   6

Q.12 Education is considered as important input for the development of a nation. How?   6

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

Explain three dimensional approach of Govt. against poverty.

Section – B [Statistics]

Q.13   Data collected for the first time from the sources of origin is called –   1

    (a) Primary data   (b) Secondary data (c) Internal data   (d) None of these

Q.14 For drawing lottery ------------ sampling is used.   1

    (a) random   (b) purposive   (c) stratified   (d) quota

Q.15 Arithmetic mean of these times 5,7,8,15,20 is –   1

    (a) 10   (b) 10.2   (c) 11.2   (d) 12

Q.16 Coefficient of range is –   1

(a) $\left(\dfrac{H+L}{H-L}\right)\times 2$ (b) $\left(\dfrac{H+L}{2}\right)$ (c) $\dfrac{H+L}{H-L}$ (d) $\dfrac{H-L}{H+L}$

Q.17 Make a format of table presenting all its parts.   3

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

Write three importance of statistics in Economics?

Q.18 Calculate coefficient of correlation between x and y series :   3

	x series	y series
No. of items	6	6
Arithmetic mean	350	138
Square of deviation from mean	19	94

Summation of product of deviation of x and y series from their respective arithmetic mean =41.

Q.19 What are four main merits of classification?   4

Q.20 In a class of 50 students 10 have failed and their average of mark is 2.5. The total marks secured
by the entire class were 281. Find the average marks those who have passed.   4

Q.21 Calculate range and coefficient of range of the following series :   4

Size	:	10	11	12	13	14	15	16	18
Frequency	:	1	13	24	14	15	13	16	20

Q.22 Explain statistical errors.   6

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

Explain census method and its merits and demerits.

Q.23 In 2011-12 Net Domestic Product by Industry of origin (at 2004-05) Present this information in the
form of pie diagram :   6

Sector	Percentage share
Primary	16.2
Secondary	25.4
Transport	27.5
Finance	18.1
Community	12.8
	100

Q.24 Find the missing frequency in the following distribution if N=60 and median is 40.   6

Marks	:	0-10	10-30	30-60	60-80	80-90
Frequency	:	5	f1	f2	8	2

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

Determine median value of the following series :

Marks	:	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
No. of std.	:	4	6	10	10	25	22	18	5

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

Half Yearly Examination 2017 – 18

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

Q.1   Number system conversion : $4 \times 1\frac{1}{2} = 6$

   (i) $(283)_{10} =$ $(?)_2 =$ $(?)_8 =$ $(?)_{16}$

   (ii) $(1101011)_2 =$ $(?)_{10} =$ $(?)_8 =$ $(?)_{16}$

   (iii) $(367)_8 =$ $(?)_{10} =$ $(?)_2 =$ $(?)_{16}$

   (iv) $(F6)_{16} =$ $(?)_{10} =$ $(?)_8 =$ $(?)_2$

Q.2   Solve the following :   5

   (i) $(327)_8$ $+$ $(125)_8 =$ $(?)_8$

   (ii) $(FA2)_{16}$ $+$ $(CBA)_{16} =$ $(?)_{16}$

   (iii) $(11011)_2$ $+$ $(11110111)_2 =$ $(?)_2$

   (iv) $(72)_8$ $+$ $(67)_8 =$ $(?)_8$

   (v) $(7AF)_{16}$ $+$ $(1FA)_{16} =$ $(?)_{16}$

   (vi) $(10111)_2$ $+$ $(1101111)_2 =$ $(?)_2$

        With 1'8 & 2'8 complement method

   (vii) $(25.43)_{10}$ $+$ $(?)_2 =$ $(?)_8 =$ $(?)_{16}$

Q.3   What do you mean by computer? Write full form.   2

Q.4   Draw the memory flow chart.   2

Q.5   Explain :   (i)   Multi programming os $1\frac{1}{2} + 1\frac{1}{2} + 1 = 4$

             (ii)   1st Generation computers

             (iii)   Cache Memory

Q.6   Explain all kinds of RAM.   4

Q.7   What is the need of Secondary memory?   1

Q.8   Explain :   (i)   Shift operators. $\frac{1}{2} + \frac{1}{2} = 1$

             (ii)   Logical operators $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 1\frac{1}{2}$

             (iii)   Keywords   1

             (iv)   Header files $1\frac{1}{2}$

Q.9   Give differences : $4 \times 2 = 8$

   (i)   Impact printers V/s Non Impact Printers

   (ii)   Compiler V/s Interpreter

   (iii) IGL V/s 3GL

   (iv)   Procedural V/s Non procedure programming

Q.10 Write Programs for the following :

    (i)   WAP to calculate area of a square.   2

    (ii)   WAP to find Max no. from 3 nos. (Use logical operator)   2

    (iii)   WAP to print larger no from two nos. (use conditional operators)   2

    (iv)   WAP to calculate salary of an employee use basic salary, HRA 10% of Basic DA 5% of Basic, PF 12% of Basic. Calculate total salary as Basic + HRA + DA + PF   5

            Format should be like this :

            Name   :   ------------------

            Designation   :   -----------------

            Date   :   -----------------

            Basic Salary   :   -----------------

            HRA   :   -----------------

            DA   :   -----------------

            PF   :   -----------------

            Total Salary payable :   ------------------

    (v)   To print series : 1   2   3   4   5   ----------- n   2

    (vi)   1   1   2   3   5   8   13   -----------   3

    (vii)   Print reverse No. of a number.   3

    (vii)   Print Max digit from a given no eg. 173 →Max digit =7   3

    (viii) * * * * *   3

            * * * *

            * * *

            * *

            *

    (ix)   1   3

                   2   2

              3   3   3

          4   4   4   4

    (x)   1,   12,   123,   1234 -------------   2

Q.11 What do you mean by entry control loop and exit control loop? Explain with eg.   3

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Code No. 11/Maths/NLCS/46

Half Yearly Examination 2017 – 18

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

Question No. 1 to 4 carry One Mark each., Question No. 5 to 12 carry Two Marks each.

Question No. 13 to 23 carry Four Marks each. Question No. 24 to 29 carry Six Marks each.

Section – A

Q.1   What is power set?

Q.2   If $A = \{1,2\}$ find the set $A \times A$.

Q.3   Find the value of $\sin 75°$.

Q.4   If $^nC_9 = {}^nC_8$, find $^nC_{17}$.

Section – B

Q.5   If $x = \{a,b,c,d\}$ and $y = \{f,b,d,g\}$, find (i) $x - y$ (ii) $x \cap y$.

Q.6   If $\left\{\dfrac{x}{3}+1, y-\dfrac{2}{3}\right\} = \left\{\dfrac{5}{3}, \dfrac{1}{3}\right\}$, find the values of x and y.

Q.7   Prove that $3\sin\dfrac{\pi}{6}\sec\dfrac{\pi}{3} - 4\sin\dfrac{5\pi}{6}\cot\dfrac{\pi}{4} = 1$.

Q.8   Solve : $i^9 + i^{19}$.

Q.9   If $\dfrac{1}{6!} + \dfrac{1}{7!} = \dfrac{x}{8!}$ find x.

Q.10   For what value of x, the numbers $-\dfrac{2}{7}, x - \dfrac{7}{2}$ are in G.P.?

Q.11   Evaluate $\dfrac{n!}{r!(n-r)!}$ When $n = 5, r = 2$

Q.12   Insert two numbers between 3 and 81 so that the resulting sequence is in G.P.

Section - C

Q.13   If $\cup = \{1,2,3,4,5,6,7,8,9\}$ $A = \{2,4,6,8\}$ and $B = \{2,3,5,7\}$. Verify that $(A \cup B)' = A' \cap B'$.

Q.14   Let $A = \{1,2,3,...........,14\}$. Define a relation R from A to A by $R = \{(x,y) : 3x - y = 0,\}$ where $x, y \in A\}$. Write down its domain, co domain and Range.

Q.15   Prove that $2\sin^2\dfrac{3\pi}{4} + 2\cos^2\dfrac{\pi}{4} + 2\sec^2\dfrac{\pi}{3} = 10$.

Q.16   Express $\dfrac{5+\sqrt{2}i}{1-\sqrt{2}i}$ in the form $a + ib$.

Q.17   Find the conjugate of $\dfrac{(3-2i)(2+3i)}{(1+2i)(2-i)}$.

Q.18 Convert the complex number $\dfrac{-16}{1+i\sqrt{3}}$ into polar form.

OR

Find the modulus and argument of the complex number $-2-2i$.

Q.19 Find the sum of n terms of the sequences 7,77,777,7777,………… .

OR

If the sum of n terms of an A.P. is $3n^2+5n$ and its mth term is 164, find the value of m.

Q.20 If A.M. and G.M. of two positive number a and b are 10 and 8, respectively, find the numbers.

Q.21 Draw appropriate Venn diagram for the following : (i) $\left(A\cup B\right)'$ (ii) $\left(A\cap B\right)'$.

Q.22 Prove ${}^{n}C_{r}+{}^{n}C_{r-1}={}^{n+1}C_{r}$.

Q.23 Find n if ${}^{2n}C_{3}:{}^{n}C_{3}=12:1$

OR

Find n if ${}^{n-1}P_{3}:{}^{n}P_{4}=1:9$

Section - D

Q.24 Prove that $\tan 4x=\dfrac{4\tan x\left(1-\tan^2 x\right)}{1-6\tan^2 x+\tan^4 x}$.

Q.25 Express the following expression in the form of $a+ib$ $\dfrac{\left(3+i\sqrt{5}\right)\left(3+i\sqrt{5}\right)}{\left(\sqrt{3}+\sqrt{2}i\right)-\left(\sqrt{3}-i\sqrt{2}\right)}$.

Q.26 Solve the following system of inequalities graphically $x+2y\le 8,\ 2x+y\le 8,\ x\ge 0,\ y\ge 0$.

Q.27 A group consists of 4 girls and 7 boys. In how many ways a team of 5 members be selected if the team has (i) no girl? (ii) at least 3 girls?

Q.28 Prove the following by using the principle of mathematical induction for all $n\in N$.

$$\frac{1}{2.5}+\frac{1}{5.8}+\frac{1}{8.11}+\text{.........}+\frac{1}{\left(3n-1\right)\left(3n+2\right)}=\frac{n}{6n+4}.$$

OR

Using principle of mathematical induction, prove that $X^{2n}-Y^{2n}$ is divisible by X+Y

Q.29 If $\dfrac{a^n+b^n}{a^{n-1}+b^{n-1}}$ is the A.M. between a and b, then find the value of n.

OR

How many terms of the G.P. $3,\dfrac{3}{2},\dfrac{3}{4},\dots\dots$ Are needed to give the sum $\dfrac{3069}{512}$?

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Half Yearly Examination 2017 – 18

Time: 3:00 Hrs.   **M. M. 90**

Question No. 1 to 8 carry One Mark each :

Q.1   What is the modern concept of business?

Q.2   Give two causes of speculative risks.   ½+½=1

Q.3   "Creditors do not actually have to worry about their dues in case the business fails". In which form of business is this possible? Which special feature is highlighted in this statement?

Q.4   This plans the Physical arrangement of resources used for production of goods, identify the arrangement?

Q.5   Which objective does government wish to achieve through public enterprises?

Q.6   A public enterprises is granted autonomy to manage but at the same time, it is accountable for specified results. Name the enterprise?

Q.7   State two uses of VSAT services?

Q.8   After the settlement of claim the insurer gets the ownership title of the insures property. Name the principles of insurance.

Question No. 9 to 14 carry Three Marks each :

Q.9   Risk in business is not by choice but compulsion. Comments.

Q.10 Business supplies goods and services to meet material needs of human for financial gain. Discuss.

Q.11 Name the Industries, which are set up within proximity of raw materials and explain it.

Q.12 What is meant by partner by estoppels? Explain.

Q.13 State difference between private and public sector on the basis of following points :
      (i) management   (ii) Ownership   (iii) Accountability

Q.14 Goods are easily separable but services are not? Explain.

Question No. 15 to 19 carry Four Marks each :

Q.15 Marine insurance involves insurance for ship, Cargo and Freight. Explain.

Q.16 Every year, lot of Agricultural production is spoilt during rainy season due to lack of proper storage facilities in villages. Government has decided to construct a warehouse in radius of every 100km. So that necessary goods can be stored. This will reduce wastage and goods will be available even during bad weather conditions. What values is Government trying to achieve?

Q.17 List area where the state or control ownership is a preferred from of business organization. Justify your choice of areas.

Q.18 For which of the following types of business do you think a partnership form of organization would be more suitable, and why?

(i)   Grocery store   (ii)   Medical Clinic   (iii)   Legal Consultancy

(iv)   Craft Centre   (v)   Internet Cafe   (vi)   Charted Accountancy firm

Q.19 Mr. Govind is going for a Foreign assignment for a period of three years. He sold all his furniture and earned money more than the he had spent to purchase the same. Will it be considered as a business? Also explain the characteristic of business which is being stressed upon in the above said example?

Question No. 20 to 23 carry Five Marks each :

Q.20 Now a days almost all corporate offices adopt parks or roads near to their office complex for maintenance, which objective they try to achieve?

Q.21 Why is partnership considered by some to be a relatively unpopular form of business ownership? Explain the merits and limitations of partnership?

Q.22 Disinvestment brought in many international brands in the Indian markets. As a result consumers enjoyed the variety but local producers faced tough competition. Discuss the role of multi-nationals with reference to Indian markets.

Q.23 A factory owner insures his stock of goods. He fails to make necessary safety arrangement to protect the factory from fire. Later, factory catches fire and could not be controlled because there were no fire extinguishers in the factory. Will the factory owner receive insurance claim?

Question No. 24 to 27 carry Six Mark each :

Q.24 Indian postal Department is no more a department related to sending letters through post. Comment.

Q.25 Recently Central Government allowed Foreign direct Investment in the consumer products but political parties most and domestic manufacturers opposed it aggressively, what is your opinion on this issue?

Q.26 Kiran is a sole proprietor. Over the post decade, her business has grown from operating a neighbourhood corner shop selling accessories such as artificial jewellery, bags, hair clips and nail art to a retail chain with three branches in the city. Although she looks after the varied functions in all the branches, she is wondering whether she would form a company to manage her business better. She also has plans to open branches country wide.
(i)   Explain two benefits of remaining in a sole proprietor.
(ii)   Explain two benefits of converting to a company.
(iii)   What role will her decision to go nationwide play in her choice of form of the organization?
(iv)   What legal formalities will she have to undergo to operate business as a company?

OR

What do you understand by sole proprietorship term? Explain its merits and limitation?

Q.27 Best product Ltd. manufactures consumer products. One of their shampoos has gained good market demand. The owner decided to Increase its price by 30% to earn higher profits. In order to retain its costumers he offered a face cream free with every purchase of shampoo bottle. This face cream did not have demand so to get rid of the huge stock of the company decided to offer it as free. They Advertised that the cream is useful for sunburns but it was not actually true. State the values best products Ltd. is ignoring.

OR

Describe various types of insurance examine the nature of risks protected by each type of insurance.

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Half yearly Examination 2017 – 18

Time: 1:30 Hrs.   **M. M. 40**

Note: Each Question Carry 5 Marks.

Q.1   Explain the rock-painting "A Roaring Animal of Bhimbetka.

Q.2   Explain the compositional aspect of the rock painting "wizard's Dance" of Bhimbetka.

Q.3   Describe the historical as well as artistic aspects of the idol "Dancing Girl".

Q.4   Is the Mother Goddess an idol? Explain it with justification.

Q.5   What is Mara Vijay? Describe the compositional arrangement of this relief.

Q.6   Explain the sculpture "Mother and child".

Q.7   Explain the theme of the sculpture "Nataraja".

Q.8   What are the characteristics of the bronze sculpture "Devi Uma?

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