DELHI PUBLIC SCHOOL GAYA

(Under the aegis of the Delhi Public School Society, New Delhi)

Affiliated to C.B.S.E., New Delhi Affiliation No.330530, School Code - 65572

WINTER VACATION ASSIGNMENT CLASS-XI (SESSION: 2023-24)

Are you looking for some interesting fun learning assignment to make your learning session interesting and engaging? Here in this assignment, you will find some very interesting and engaging tasks that will be fun solving.

ENGLISH CORE (301)

1. You have realised the necessity of education and financial independence of women for their family, society and in turn for the nation. Write a letter to the Editor, 'The National Times' highlighting your ideas on the importance of education of women leading to a better status for them. You are Tarun/Taruna, B-7/9, Mall Road, Delhi (120-150 words)

2. There is a vast pool of women talent in our country. Given encouragement and opportunities, women can excel in every field. They are contributing to the nation's progress as scientists, doctors, entrepreneurs, sports persons, etc. There is no limit to what they can achieve. Write a speech in 150-200 words on "Women Empowerment". You are Ram/Roma.

3. You had to appear for your Maths Tutorial on 7th of May this year and were travelling by one of the local buses. You were stuck in a traffic jam. Write a letter to the Editor of 'The Times of India' stating your experience and expressing your concern over the growing vehicular traffic on the roads and its ill effects.

MATHEMATICS (041)

1. Find the points on the x-axis whose distance from the line equation $(x/3) + (y/4) = 1$ is given as 4 units.

2. What is the equation of the line that has y−intercept 4 units and is perpendicular to the line $y = 3x - 2$. Also, find the equation of the line, which makes intercepts −3 and 2 on the y-axis respectively.

3. Using the binomial theorem, show that $6^n - 5^n$ always leaves remainder 1 when divided by 25.

4. If the coefficients of 2nd, 3rd and the 4th terms in the expansion of $(1 + x)n$ are in A.P., then find the value of n.

5. The sums of n terms of two arithmetic progressions are in the ratio $5n + 4 : 9n + 6$. Find the ratio of their 18th terms.

BIOLOGY (044)

1. Tissues may define as group of cells which has similar
   (a) Origin
   (b) Function
   (c) Structure
   (d) All of this

2. The tissue which has the to differentiate
   (a) Meristematic
   (b) Chlorenchyma
   (c) Parenchyma
   (d) None

3. Cell wall of sclerenchyma is thick due to the deposition of
   (a) Suberin
   (b) Pectin
   (c) Cutin
   (d) Lignin

4. Cambium helps in the growth of
   (a) Young leaves
   (b) Girth of the stem
   (c) Length of the stem
   (d) Internode

5. Water proof layers of plant body consist of _____ tissue.
   (a) Supportive
   (b) Protective
   (c) Complex
   (d) Meristematic

6. Among the following the chief function/ functions of parenchyma is
   (a) Storage of food
   (b) Photosynthesis
   (c) Buoyancy
   (d) All of this

7. _____ is present just below the epidermis.
   (a) Parenchyma
   (b) Collenchyma
   (c) Sclerenchyma
   (d) None

8. A single large vacuole present in the tissue called
   (a) Collenchyma
   (b) Meristematic
   (c) Sclerenchyma
   (d) Parenchyma
9. Tracheary elements are comprised of
   (a) Vessels and tracheid
   (b) Tracheid and parenchyma
   (c) Tracheid and fibre
   (d) All of this
10. Function of trachae is
    (a) Mechanical support
    (b) Storage of food
    (c) Water conduction
    (d) None
11. Fibres present in the phloem is
    (a) Living
    (b) Dead
    (c) Died after maturation
    (d) Can't say
12. Choose the correct arrangement
    (a) Phloem > epidermis > xylem > cambium
    (b) Epidermis > xylem > cambium > Phloem
    (c) Epidermis > phloem >cambium >xylem
    (d) Epidermis > cambium > Phloem > xylem
13. The tissue which is related with the secretion is
    (a) Ciliated Epithelium
    (b) Columnar Epithelium
    (c) Glandular Epithelium
    (d) B & C
14. The epithelial tissue which has multiple layer is
    (a) Columnar
    (b) Ciliated
    (c) Stratified
    (d) Squamous
15. Matrix is found in
    (a) Bones
    (b) Muscles
    (c) Nerves
    (d) Ligament
16. In the wall of the intestine we can found
    (a) Skeletal
    (b) Smooth
    (c) Cardiac
    (d) A & B both
17. The longest neuron can be found in
    (a) Giraffe
    (b) Elephant
    (c) Blue Whale
    (d) Can't say
18. Packing tissue is often called _____ tissue.
    (a) Areolar
    (b) Adipose
    (c) Tendon
    (d) Cartilage
19. Function of lymph is
    (a) maintain pH balance
    (b) Killing germs
    Transportation of O_2 and CO_2
    (d) All of this
20. If blood vessels are compared with river the capillaries can be converted with
    (a) Drainage
    (b) Canal
    (c) Pond
    (d) Sewage
21. Wall of uterus contains
    (a) Ciliated Epithelium
    (b) Cartilage
    (c) Smooth muscle
    (d) Tendon
22. _____ is popularly known as wood.
    (a) Phloem
    (b) Sclerenchyma
    (c) Xylem
    (d) All of this
23. Haversian canal is present in
    (a) Cartilage
    (b) Tendon
    (c) Ligament
    (d) Bones
24. Intercalated disc is present in
    (a) Cartilage
    (b) Cardiac muscle
    (c) Smooth muscle
    (d) Bones

25. The tissue which has least intercellular space
    (a) Collenchyma
    (b) Meristematic
    (c) Sclerenchyma
    (d) Parenchyma

PHYSICS (042)

1. A particle executes simple harmonic motion with an amplitude of 5 cm. When the particle is at 4 cm from the mean position, the magnitude of its velocity in SI units is equal to that of its acceleration. Then, find its periodic time in second.

2. A cylindrical plastic bottle of negligible mass is filled with 310 mL of water and left floating in a pond with still water. If pressed downward slightly and released, it starts performing simple harmonic motion at angular frequency. If the radius of the bottle is 2.5 cm then ω is close to (density of water = 103 kg/m3)

3. A particle undergoing simple harmonic motion has time-dependent displacement given by $x(t) = A\sin(\pi t/90)$. Find the ratio of kinetic to the potential energy of this particle at $t = 210$ s .

4. A pendulum is executing simple harmonic motion and its maximum kinetic energy is K1. If the length of the pendulum is doubled and it performs simple harmonic motion with the same amplitude as in the first case, find its maximum kinetic energy is K2. Then determine the relation between K1 and K2.

5. A simple pendulum of length 1 m is oscillating with an angular frequency 10 rad/s. The support of the pendulum starts oscillating up and down with a small angular frequency of 1 rad/s and an amplitude of 10–2 m. Determine the relative change in the angular frequency of the pendulum .

6. A damped harmonic oscillator has a frequency of 5 oscillations per second. The amplitude drops to half its value for every 10 oscillations. Determine the time it will take to drop to 1/1000 of the original amplitude .

7. A resonance tube is old and has a jagged end. It is still used in the laboratory to determine the velocity of sound in the air. A tuning fork of frequency 512 Hz produces the first resonance when the tube is filled with water to a mark 11 cm below a reference mark, near the open end of the tube. The experiment is repeated with another fork of frequency 256 Hz which produces the first resonance when water reaches a mark 27 cm below the reference mark. Find the velocity of sound in air.

8. Two simple harmonic motions, as shown here, are at right angles. They are combined to form Lissajous figures.

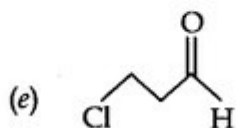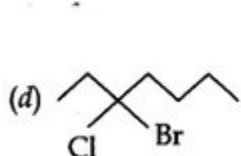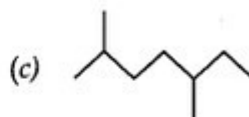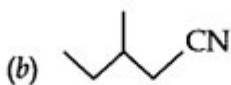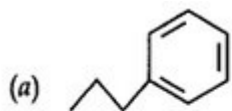| Parameters	Curve
a) A = B, a = b; $\delta = \pi/2$	Line
b) A $\neq$ B, a = b; $\delta = 0$	Parabola
c) A = B, a = 2b; $\delta = \pi/2$	Circle
c) A $\neq$ B, a = b; $\delta = \pi/2$	Ellipse

9. In an engine, the piston undergoes vertical simple harmonic motion with amplitude 7 cm. A washer rests on top of the piston and moves with it. The motor speed is slowly increased. Determine the frequency of the piston at which the washer no longer stays in contact with the piston.

10. A toy-car, blowing its horn, is moving with a steady speed of 5 m/s, away from a wall. An observer, towards whom the toy car is moving, is able to hear 5 beats per second. If the velocity of sound in air is 340 m/s, what will be the frequency of the horn of the toy car.

11. A silver atom in a solid oscillates in simple harmonic motion in some direction with a frequency of1012 s–1. What is the force constant of the bonds connecting one atom with the other? (Mole wt. of silver 108 and Avogadro number 6.02 × 1023 gm mole–1)

12. The ratio of maximum acceleration to maximum velocity in a simple harmonic motion is 10 s–1. At, t = 0 the displacement is 5 m. What is the maximum acceleration? The initial phase is $\pi/4$.
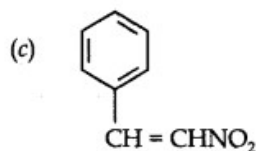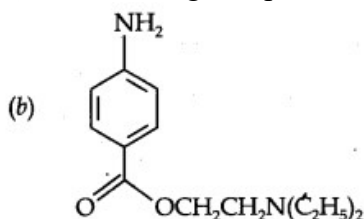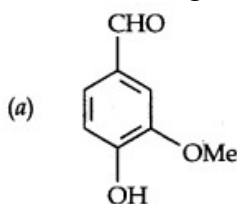
CHEMISTRY (043)

1. What are hybridisation states of each carbon atom in the following compounds? $CH_2=C=O$, $CH_3CH=CH_2$, $(CH_3)_2CO$, $CH_2=CHCN$, C_6H_6.

2. Indicate the sigma and pi bonds in the following molecules:

C_6H_6 , C_6H_{12}, CH_2Cl_2, $CH=C=CH_2$, CH_3NO_2, $HCONHCH_3$

3. Write bond-line formulas for: Isopropyl alcohol, 2,3-Dimethylbutanal, Heptan-4-one.
4. Give the IUPAC names of the following compounds:

5. Give condensed and bond line structural formulas and identify the functional group(s) present, if any, for:
    (a)   2, 2, 4-Trimethylpentane
    (b)   2-Hydroxy-l, 2, 3-propanetricarboxylic acid
    (c)   Hexanedial.
6. What are electrophiles and nucleophiles? Explain with examples.
7. Identify the functional groups in the following compounds:

8. Draw formulas for the first five members of each homologous series beginning with the following compounds,
    (a)   H—COOH   (b) CH_3COCH_3
    (c)   H—CH=CH$_2$

ACCOUNTANCY (055)

1. Rectify the following errors:
    (a)   Goods sold for Rs 1000 was wrongly entered in purchase account.
    (b)   Credit Purchase of Rs 8,000 to Mohan omitted to be recorded in the books.
    (c)   Repair made to Machinery Rs 1000 was omitted to be recorded.
    (d)   Credit Purchase of Rs 100 to Priya was recorded as Rs 10.
    (e)   RS 800,000 paid for office furniture was debited to office expenses account.
2. Give one example each of Direct Expenses and Indirect Expenses
3. Calculate Cost of goods sold and gross profit from the following
    Sales Rs 500,000 Gross profit is 25% of cost.
4. Give two Feature of computer System.
5. What is Computerized Accounting System? Explain briefly.
6. Explain six Accounting Principles or Concepts.
    (a)   Accrual principle.   (b)   Conservatism principle
    (c)   Full Disclosure   (d)   Historical cost
    (e)   Objectivity   (f)   Accounting period.
7. M/s Lokesh Fabrics purchased a textile machine on 1st April, 2014 for ₹ 1,00,000. On 1st July, 2015 another machine costing ₹ 2,50,000 was purchased. The machine purchased on 1st April, 2014 was sold for ₹ 25,000 on 1st October, 2018. The company charges depreciation @ 15% p.a. on straight line method. Prepare machinery account

BUSINESS STUDIES (054)

1. What is international business? How is it different from domestic business?
2. Which document contains a guarantee of a bank to honor a draft drawn on it by an exporter's bank?
3. Explain C&F agent.
4. Explain the objectives of WTO?
5. Why is it necessary for an export firm to go in for pre-shipment inspection?
6. Why is it necessary to get registered with an export promotion council?
7. Birju is a vegetable seller who sells all kinds of vegetables on his hand cart every morning and moves from one place to another during the day to sell his stock at the doorstep of the customers.
   In the context of the above case.
   (a) Birju will be classified as which type of Retailer.
   (b) State any two feature of that retailer.
8. Harmeet Singh owns a large scale retail outlet in Chandigarh. He deals with various kinds of products in his shop like textiles footwear, cosmetics, stationary, Grocery, etc. He sells tham in different divisions in his big shop.
   In context of the above cases:
   (a) Identify the type of retail outlet being described in the above lines.
   (b) State any three features of that outlet.
9. Overseas (P) Ltd. Is a company incorporated with ROC. Gawlior. It wishes to import low value Chinese toys and sell them in Indian markets. Write a detailed note advising its board of Directors about the net six procedural steps of import in goods as per the indian Customs Regulations and EXIM policy. This prospective importer has already procured the IEC Code number.
10. Identify the document highlighted in the following statements.
    (a) This certificate specifies the origin of godds exported.
    (b) This document is issued by the commanding officer of the ship to the exporter after the cargo is loaded on the ship.
    (c) this document is prepared by shipping company to acknowledge the receipt of goods on ship and gives an undertaking to carrry them to part of destination.
    (d) this document is the most appropriate and secure method of payment to settle international transactions.
11. ABC Ltd. Manufactures leather purses and garments. The company plans to expand their business at international level as domestic market is not sufficient for large expansion and growth. The company is not having any idea of starting export neither they have any foreign exchange and any one known in foreign country.
    (a) State few problems that company may have to face in conducting international trade.
    (b) State the procedure to obtain IEC Number.
    (c) State the benefits our country will get with this expansion.
12. Vishal Mega Mart is India's largest Fashion-led hypermarket chain with a footprint of over 204 stores, cumulative trading area in excess of 3 million square feet, in over 110 cities and towns across India.Vishal is sharply focused at the needs of consumers in Apparel, General Merchandise, Grocery and Personal Care in Tier-1, Tier-2 and Tier-3 cities and towns and is dedicated to offer the best value and choice to its millions of customers.Vishal offers clearly differentiated value to customers in the following product categories for which it has three departments.
    (a) Fashion: Fresh, trendy and affordable fashion comprising latest Apparel, Footwear & Lifestyle accessories collection across Men's, Women's & Kid's.
    (b) General Merchandise: Catering to all the household needs such as Kitchen-ware, Home Furnishings, Luggage & Travel Accessories, Home/Kitchen Appliances, Toys & Sports etc. at best prices
    (c) Grocery and Household Needs: Catering to all daily needs with an extensive Grocery & Staples, Packed Food, Branded Personal Care and Household Needs products.
       (i) Mention two demerits of the type of large scale retail trade identified in part I.

(ii) Explain the other types of retail trade.

ECONOMICS (030)

1. Consumer Price Index (CPI) Analysis:
   - Collect data on the prices of a basket of goods over several months.
   - Calculate the CPI for each month and analyze the trends in inflation or deflation.
2. Stock Market Index Analysis:
   - Choose a stock market index (e.g., S&P 500) and collect historical data.
   - Investigate the factors contributing to variations in the index.
3. Quality of Life Index:
   - Develop an index incorporating various factors such as income, education, and healthcare.
   - Compare the quality of life in different regions or cities.
4. Productivity Index in Industries:
   - Analyze productivity changes in specific industries (Automobile/ EV/ Cement/ IT) over time using an appropriate index.
   - Investigate the impact of technological advancements or policy changes.

HISTORY (027)

1. Why did the nomadic organisation of Mongols have to trade with China? What effect did this trade cast on Chinese economy and politics?
2. Briefly discuss aggressive nationalism, Westernisation and tradition in the context of Japan.
3. What steps were taken for the rights and interests of the natives in North America? What is their present position?
4. Explain the importance of Gold Rush in economic and political expansion of America.

POLITICAL SCIENCE (028)

1. Indian Secularism has stood the test of time due to its merits and demerits. Explain
2. Nationalism in India has a solid foundation based upon verifiable values. Explain
3. Rights and Duties are interrelated and help enhance quality of democratic systems for it's sustenance in a hostile world system. Examine
4. Freedom and Liberty are both equally important to help citizens avail the nectar of democratic life. Explain

GEOGRAPHY (029)

1. By referring to the physical map of India describe the physical variations which you would come across while travelling from Kashmir to Kanniya kumari and from Jaisalmer in Rajasthan to Impbal in Manipur.
2. Collect various samples of soil and prepare a report on the type(s) of soilsfound in your region.
3. On an outline map of India, mark the areas covered by the following soil categories.
   (a) Red soil
   (b) Laterite soil
   (c) Alluvial soil.
4. Collect the names of national parks, sanctuaries and biosphere reserves of the state where your school is located and show their location on the map of India.

PSYCHOLOGY (037)

1. Draw a mental image and explain the nature of thinking.
2. How need for achievement, need for power and need for affiliation are different from each other? Explain this with examples.
3. Draw the motivation cycle on the A4 size paper by using colours and give the examples of a real life situation.
   Note: you have to use A4 size pages for making this assignment.

COMPUTER SCIENCE (083)

1. Differentiate between list and dictionary in python.
2. How do you create a dictionary? Explain with examples.

3. What is the purpose of the sorted() function?
4. How can you traverse a dictionary and access elements from it?
5. Discuss the characteristics of dictionary in python.
6. Write a program in python, to input a list of strings and sort the list in descending order.
   Example:
   Input
   ['sky','sea','road','water','sun','moon']
   Output
   ['moon','road','sea','sky','sun','water']
7. Write a program in python to input a tuple of tuples(numbers) and display the sum of the each tuple.
   Example:
   Input
   ((5,70,1),(4,8,3),(0,100))
   Output
   Sum of the elements in tuple1=76
   Sum of the elements in tuple2=15
   Sum of the elements in tuple3=100
8. PRACTICAL FILE COPY WORK: [MANDATORY]
   Write total five programs for tuple in Python in the Computer Science Practical File copy for which you need to either write the output on the left hand side white page or you can paste the print out also for the output part.
   Note: You can pick up these five programs of tuple in Python either from the class work note book (taught in class) or you can choose some tuple programs from your text book also.

INFORMATICS PRACTICES (065)

1. Deleting digitally stored data means changing the details of data at bit level, which can be very time consuming. Therefore, when any data is simply deleted, its address entry is marked as free, and that much space is shown as empty to the user, without actually deleting the data.
   In case data gets deleted accidentally or corrupted, there arises a need to recover the data. Recovery of the data is possible only if the contents/memory space marked as deleted have not been overwritten by some other data.
   (a) Can you recover the data once deleted? Justify
   (b) Give any one security threat involved when we throw away electronic gadgets that are non-functional.
2. Write down the type of memory needed to do the following:
   (a) To execute the program
   (b) To store the instructions which cannot be overwritten
3. Predict the output of the following:
   w,x,y,z = 5,6,7,8
   w,x,y,z = w*w, w*x, x*y, y*z
   print(w, x, y, z)
4. Find errors in the following code fragment.(Rewrite the program underlining the correction)
   x= int(input("Enter value of x:")
   for in range [0,10]:
   if x=y:
           print(x + y)
           else:
           print(x-y)
5. Suggest the corresponding Python Statement of the following:
   (a) Assign 30 to a variable length and 40 to a variable breadth.
   (b) Assign multiplication of length and breadth to a variable area

6. Consider the following table ITEM :

Item_no	Item_name	Price
1	Pen	10
2	Pencil	5
3	Rubber	7
4	Sharpener	8

What is the degree and cardinality of the above mentioned table?

7. Write any two advantages of using MySql?

8. DAV Sports Management Committee has decided to conduct cricket matches between students of class XI and Class XII. Students of each class are asked to join any one of the four teams — Team Titan, Team Rockers, Team Magnet and Team Hurricane. During summer vacations, various matches will be conducted between these teams. Help your sports teacher to do the following:

   Create a table "TEAM" in MySQL with following considerations:
   (a) It should have a column TeamID for storing an integer value between 1 to 9, which refers to unique identification of a team.
   (b) Each TeamID should have its associated name (TeamName), which should be a string of length not more than 10 characters.
   (c) It should have a column MatchDate
   (d) It should have a column of number of participants namely, TeamParticipants.

9. The Doc_name column of a table HOSPITAL is given below:

   Doc_Name
   Avinash
   Hariharan
   Vinayak
   Deepak
   Sanjeev

   Write the output of the following queries:
   (a) SELECT Doc_name FROM HOSPITAL WHERE Doc_name LIKE '%v';
   (b) SELECT Doc_name FROM HOSPITAL WHERE Doc_name LIKE '_e%'

10. Evaluate the following:
    (a) print("ab">"ac" and "bc"<"ad")
    (b) print(20-5%10>10 and 7+8<=15)
    (c) print(True and True and not True)

PHYSICAL EDUCATION (048)

1 How is psychology important for sportsperson?
2. Describe any two developmental characteristics of Adolescence.
3. Briefly Describe any five skills required in the field of Physical education and sports
4. Briefly discuss the concept of doping.
5. Describe the steps team cohesion. What are the factors that affect team cohesion?

HINDI (302)

1. 'जामुन का पेड़' के नीचे दबे आदमी के फ़ाइल बंद होने (मृत्यु) के लिए ज़िम्मेदार किसी एक व्यक्ति का काल्पनिक साक्षात्कार लिखिए।
2. 'आलो–आधाँरि' पाठ में वर्णित बेबी हालदार की तरह अपने आस–पास के किसी घरेलू नौकर/नौकरानी के बारे में पता कर उसके बारे में लगभग 100 शब्दों में लिखिए।
3. 'निर्मला पुतुल' के बारे में जानकरी प्राप्त कर उन पर एक संक्षिप्त परियोजना तैयार कीजिए।

HINDUSTANI MUSIC (VOCAL) (034)

1. Draw and Describe the Structure and parts of Tanpura and Tabla with a sketch.

PAINTING (049)

Topic: Nature's Textures

Choose a natural object (leaf, flower, tree bark, etc.) and create a painting focusing on its textures.

Use water colours or acrylics to depict the intricate details and variations in texture.

Experiment with different brush strokes and techniques to capture the tactile quality of the object.

YOGA (841)

1. Explain the Working of Digestive system.
2. Ecxplain the concept of Healthy leaving according to Bhagwadgit Gita.

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