



DELHI PUBLIC SCHOOL JAMMU

Holiday Homework

for

Classes IX - XII

Session 2019-20



Dear Parents,

True education starts from home. Parents are the first teachers and they have a key role in shaping up the character of their children. A balance of education at home and school moulds a student's actual learning.

If parents extend a helping hand in the educational journey of their children and inspire them with hope and values, we will create successful, wholesome and future ready human beings.

Here are a few ways which parents can adopt to help with their children's education:

- ▶▶ Become a partner in your children's education. Show them how exciting and meaningful a school life can be, if they give out their best.
- ▶▶ Doing things together with parents gives children a sense of support and confidence. Reading books or the lessons together is one of the best ways to be close with the child's learning at school.
- ▶▶ The general habits of the children are closely linked with how they perform in their studies. Help them to be more organized with their daily routine and find enough time for the lessons.
- ▶▶ Remember: Lessons + Play time + Rest = Quality Student Life.
- ▶▶ Avoid unnecessary quarrels in your child's presence. Both parents should ensure that the kids are provided with adequate moral support and peaceful, loving and pleasant atmosphere at home.
- ▶▶ If you notice that your children are not performing well or giving less importance to studies, correct them at the beginning itself. Make them understand what is right and wrong rather than using ill words to blame them.
- ▶▶ When it is their exam time, don't leave them alone with their lessons. Help them to prepare for the tests with good guidance and support. You may even conduct mini tests at home before the actual test to lessen their exam worries and tensions.
- ▶▶ Kindly avoid unnecessary trips or functions that can affect their study schedule. Don't encourage your children to take unnecessary leaves from school for silly matters and make them understand the importance of daily class attendance.
- ▶▶ Lastly, make efforts to know your child's areas of interests and include them in the holiday time to give them a good relief from the stress of studies.

IMPORTANT: Many studies and surveys have shown that parent's involvement in their children's education has led to their better grades at school, higher self-esteem, better social skills and improved behaviour.

We hope that, in coming times we would see improved parent-child- teacher relationship and together we can " fulfil the promise of our children's tomorrow."

Happy Parenting!! Happy Holidays!!

Principal
DPS Jammu

DELHI PUBLIC SCHOOL JAMMU
HOLIDAYS HOME WORK
(SESSION : 2019-20)

CLASS XI

SUBJECT: ENGLISH

- 1 Do the following questions .**
- a) Write 10 questions of Notice in 50 words each.**
 - b) Make 10 Posters on the following in 50 words each.**
 - i) Wildlife Protection Week**
 - ii) Water Conservation**
 - iii) Danger of Global Warming to the future of our planet**
 - iv) Blood Donation Camp**
 - v) Hazards of Smoking**
 - c) Write the following letters.**
 - i) 3 Letters of complaint ii) 3 Letters of Placing Order**
 - iii) 3 Letters to the Editor of a newspaper**
 - iv) Write Articles on the following in 150 words each.**
 - **Need for inculcating Healthy Dietary Habits**
 - **Social Networking—A Boon or a Bane**
 - **Role of Students in Removing Illiteracy**
 - **Impact of Advertisement on Younger Generations**
 - **Importance of Time Management**
- 2 Read Newspaper Everyday and do the following.**
- a) Paste 5 Articles from the Newspaper in the Notebook and write summary of each article in 120 words.**

NOTE : DO ALL THESE QUESTIONS IN YOUR ENGLISH HOME WORK NOTE-BOOK.

DELHI PUBLIC SCHOOL, JAMMU
HOLIDAYS HOMEWORK

SUBJECT PHYSICS

CLASS : XI

Q1. Obtain an expression for centripetal force(F) acting on a particle of mass m moving with velocity v in a circle of radius 'r' then prove dimensionally $F \propto \frac{mv^2}{r}$

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Q2. The force F acting on a body depends upon (i) mass of the body 'm' (ii) Acceleration of the body 'a' . Find the expression for force F using method of dimensions.

Q3. The kinetic Energy possessed by a body depends upon its (i) mass 'm' (ii) speed 'v' . Find the expression for kinetic energy of body using the method of dimensions.

Q4. A car accelerates from rest at a constant rate α for some time after which it decelerates at a constant rate β to come to rest. If the total time elapsed is t seconds, evaluate: (a) the minimum velocity reached and (b) the total distance travelled.

Q5..Two particles 1 and 2 moves with constant velocities v_1 and v_2 . At initial moment, their radius vectors are equal to r_1 and r_2 . How must these four vectors be inter-related for the particles to collide.

Q6. Write the properties of the four fundamental forces in nature. Out of them which one is (i) Strongest (ii) Weakest.

Q7. If one metre, one Kg and one min. are taken as the fundamental units, the magnitude of force is 36 units. Find the value of force in C.G.S System.

Q8. Find dimensions of a/b in relation $P = \frac{b}{at} - \frac{x^2}{at}$ where P is power , x is distance and t is time.

Q9. Derive the three equations of motion by calculus method.

Q10. $x \propto t^2$. Predict the type of graph that will be obtained on: (a) x – t graph (b) v – t graph.

Q11 . Two particles A and B moves with constant velocities v_1 and v_2 along two mutually perpendicular straight lines towards the intersection point O. at moment $t = 0$, the particles were located at distance l_1 and l_2 from O resp. Find the time when they are nearest and also shortest distance

Q12. With what velocity must a ball be thrown vertically upwards in order to rise to a height of 20 m. How long will it be in the air?

Q13. A ball is dropped from the top of a tower of height 40 m. At the same time, a ball is thrown upwards with a speed of 20m/s. Find when and where, will the balls meet?

Q14. A position function x(t) of a particle moving along x-axis is $x=4.0-6.0t^2$, with x in meters and t in seconds.

- (a) At what time the particle (momentarily) stops?
- (b) Where does the particle (momentarily) stops?
- (c) At what negative time and positive time does the particle passes through origin?

(d) Graph x versus t for range -5 to $+5$.

Q15. If the velocity (c), acceleration due to gravity (g) and pressure (P) are taken as fundamental units, find the dimension of gravitational constant (G) in terms of c , g , and P .

Q16. Use the method of dimensions to obtain the form of dependence of the lift force per unit wing span on an aircraft wing of width L moving with a velocity v through air of density ρ , on the parameters L , v and ρ .

Q17. If the unit of velocity be 20 cm/s , the unit of acceleration be 40 cm/s^2 and unit of force be 30 dynes . What are the units of mass, length and time?

Q18. An aircraft is flying horizontally at a height of 3400 m above the ground. If the angle subtended at a ground observation point by the aircraft's positions 10 s apart is 30° , what is the speed of the aircraft?

Q19. a) Prove that the path followed by the projectile is trajectory, in case of angular projection.

b) If $A = 3 \mathbf{i} + 4 \mathbf{j}$ and $B = 7 \mathbf{i} + 24 \mathbf{j}$, find a vector having the same magnitude as B & parallel to A .

Q20. Draw $x-t$, $v-t$ and $a-t$ graphs for the following situations.

- (a) When the body is at rest
- (b) When the body is in uniform motion
- (c) When the body is in non-uniform motion

DELHI PUBLIC SCHOOL, JAMMU.

CHEMISTRY-CLASS 11TH

(HOLIDAY HOMEWORK)

(2019-2020)

CHAPTER-1 - SOME BASIC CONCEPTS OF CHEMISTRY

One Mark questions

1. What is the significant figures in 1.050×10^4 ?
2. What do mean by Mole fraction?
3. What is the relation between temperature in degree Celsius and degree Fahrenheit.
4. Calculate the formula mass of calcium chloride.
5. What is the law called which deals with the ratios of the volumes of the gaseous reactants and products?
6. How many significant figures are there in:
a) 0.0025 b) 5005

Two Marks questions

1. What is the mass percent of different elements present in sodium sulphate
2. Calculate the number of hydrogen atoms in 5 moles of ethane molecule.
3. What do mean by molarity .Calculate the molarity of NaOH in the solution prepared by dissolving its 4 g in enough water to form 250 ml of the solution.

Three Marks questions

1. State and explain the law of multiple proportions with the help of an example.
2. 3 gm of H_2 react with 29 gm of O_2 to yield water.
i) Which is a limiting reagent?
ii) Calculate the maximum amount of water that can be formed?

Five Marks questions

1. What is the difference between empirical and molecular formula? A compound contains 4.07 % hydrogen, 24.27 % carbon and 71.65 % chlorine. Its molar mass is 98.96 g. What are its empirical and molecular formulas?
2. A compound made up of two elements A and B has A= 70 %, B = 30 %. Their relative number of moles in the compound are 1.25 and 1.88. calculate
a. Atomic masses of the elements A and B
b. Molecular formula of the compound , if its molecular mass is found to be 160 u.

CHAPTER-2 - STRUCTURE OF ATOM

One Mark questions

1. Neutrons can be found in all atomic nuclei except in one case. Which is this atomic nucleus and what does it consists of?
2. Write the electronic configuration of O^{2-} .
n and l for 2p orbital?
3. What are the values of
4. Write the electronic configuration of the element having atomic number 24.
5. State Pauli Exclusion Principle.
6. What is the difference between a quantum and a photon?

Two Mark questions

1. Calculate wave number of yellow radiations having wavelength of 5800 \AA .

- Write the complete symbol for the atom with the given atomic number (Z) and mass number(A). (a) Z = 17, A = 35 (b) Z = 92 , A = 233
- Using s,p,d and f notation, describe the orbital with the following quantum numbers-
(a) n=1,l=0 (b) n=3, l=1 (c) n=4, l=2 (d) n=4, l=3
- How many electrons in an atom have the following quantum numbers?
a. n=4, ms= -1/2 b. n =3 , l=0
- (a)What is the lowest value of n that allows g orbitals to exist?
(b)An electron is in one of the 3d orbitals, Give the possible values of n,l and m for this electron.
- Calculate the total number of angular nodes and radial nodes present in 3p orbitals.

Three Mark questions

- State (a) Hund's Rule of maximum Multiplicity (b) Aufbau Principle (c) n+l rule
- Write down the quantum numbers n and l for the following orbitals
a. 2p b. 3d c. 5f
- State Heisenberg's uncertainty principle. calculate the uncertainty in the position of an electron if the uncertainty in its velocity is 5.7×10^5 m/s.
- Write the 3 points of difference between orbit and orbital.

CHAPTER-3 - CLASSIFICATION OF ELEMENTS AND PERIODIC PROPERTIES

One Mark questions

- What is the basis of triad formation of elements?
- Define Periodicity of elements. Give example

Two Mark questions.

- (a) First electron affinity are negative but the successive values are positive. Why?
(b) Why does noble gases have the highest radii in their respective periods?
- Explain why cations are smaller and anions are larger in radii than their parent atom?
- i) Define electron gain enthalpy.
ii) Why is the electron gain enthalpy of chlorine more negative than fluorine.
- (a) First electron affinity are negative but the successive values are positive. Why?
(b) Why does noble gases have the highest radii in their respective periods?
- a) Name the two elements whose existence and properties were predicted by Mendeleev though they did not exist then.
b) Arrange the following ions in the order of increasing size: Be^{2+} , Cl^- , Na^+ , Mg^{2+}

Three Mark questions

- i)Among the elements B, Al, C and Si
(a) Which has the highest first ionization enthalpy?
(b) Which has the largest atomic radius?

- ii) Na^+ has higher value of ionization enthalpy than Ne, though both have same electronic configuration.
2. a) Why does electronegativity value increases across a period and decreases down period?
b) How does electronegativity and non – metallic character related to each other?
3. i) Ionization energy of sodium is lower than that of magnesium but its 2nd ionization energy is higher. Why?
ii) Electron gain enthalpy of sulphur is more than oxygen. Why?

CHAPTER-4 – CHEMICAL BONDING AND MOLECULAR STRUCTURE

One Mark questions

1. What is the total number of sigma and pi bonds in the following molecules?
 - i) C_2H_2
 - ii) C_2H_4
2. How do you express the bond strength in terms of bond order ?
3. Define lattice enthalpy?
4. What type of bond is formed when the atoms have zero difference in electronegativity ?

Two Mark questions

1. Define hydrogen bond ? Is it weaker or stronger than the van der waals forces.
2. Although geometries of NH_3 and H_2O molecules are distorted tetrahedral, bond angle in water is less than that of ammonia. Discuss.
3. Use the molecular orbital theory to explain why the Be_2 molecule doesnot exist.

Three Mark questions

1. Describe the hybridization in case of PCl_5 . Why are the axial bonds longer as compared to equatorial bonds?
2. Discuss the shapes of the following molecules using the VSEPR model. BeCl_2 , BCl_3 , SiCl_4 , H_2S .
3. Write the resonance structures of NO_2 , SO_3 and NO_3^- .
4. Apart from tetrahedral geometry, another possible geometry for CH_4 is square planar with the four hydrogen atoms at the corners of the square and at the carbon atom at its centre. Explain why this is not square planar.
5. Which out of NH_3 and NF_3 has higher dipole moment and why?

Delhi Public school Jammu

Holiday Homework

Session (2019-20)

Class: XI

SUB: BIOLOGY

Topics: The Living World, Biological Classification, Plant Kingdom, Animal Kingdom, Morphology of Flowering Plants.

Project work

1. Prepare a herbarium of Five aromatic plants growing in Jammu region
2. Prepare a herbarium for ten different types of monocot leaves based upon their external morphology.

Draw a well labeled Diagram of:

1. Bacteria and Eubacteria.
2. TMV and T4 Bacteriophages.
3. Euglena.
4. Amoeba.
5. DNA.
6. Different nucleotides of DNA and RNA.

Questions

Q1: Explain the structure of cyanobacteria.

Q2: What do you mean by herbarium? Explain main taxonomical aids used to study biodiversity?

Q3: What is the function of endospores in bacteria?

Q4: What are the different types of lichens? Explain them.

Q5: Explain various types of life cycles found in bryophyte.

Q6: Write down some of the characteristic features and some defining features of living organisms.

Q7: Define natural system of classification. Why there is a need of classification?

Q8: Why bryophytes are known as amphibians of plant kingdom?

- Q9: What do you mean by coelome. What are its types? Define each type.
- Q10: Define levels of organization. What are the various types of levels of organizations?
- Q11: Explain the process of double fertilization in mango plant.
- Q12: Give the characteristic features of the second largest phylum of animal kingdom.
- Q13: Which part of the embryo form root and what are the various zones of root?
- Q14: What are the modifications of the roots?
- Q15: Explain the structure of dicot and monocot seed.
- Q16: Explain with the help of flow chart different type of plant tissues.
- Q17: What do you mean by phylotaxy? What are the types of phylotaxy?
- Q18: How is inflorescence different from flower?
- Q19: Define true and false fruit. Why pear is known as false fruits?
- Q20: From which part of the plant seed is formed? Differentiate between monocot and dicot seed.

Delhi Public School, Jammu
Holidays Homework(2019-20)

Class :XI

Sub: Accountancy(055)

1. “Accounting records, transactions and events can be measured in money terms”. Is this in your opinion, a limitation of accounting or an advantage? Support your views with reasons.
2. Which type of accounting information reveals profit earned or loss incurred?
3. Differentiate between Book Keeping and Accounting.
4. Who are the users of accounting?
5. Accounting provides information about the profitability and financial soundness of a concern. In addition, it provides various valuable information also, however accounting has certain limitations. Explain any such of three limitations.
6. A firm has various types of assets explain them with one example each.
7. Explain the following terms:
Drawings, sales, purchase, Bad debts, vouchers, capital, business transactions, Depreciation, Trade receivables, trade payables and merchandise
8. Distinguish between Expense and Expenditure, Profit and Gain.
9. Identify the concept on which the following statements are based and also explain their meaning.
 - i) The insignificant items and events having an insignificant economic effect need not be disclosed.
 - ii) “Same accounting method should be used from one accounting period to the Next.”
 - iii) Business is treated as an entity separate and distinct from its owner
 - iv) Only those transactions and events are recorded in accounting which can be expressed in terms of money.
 - v) Business will continue to exist for a longer period of time and there is no intention to close it or reduce its size significantly.
 - vi) All anticipated losses should be recorded in the books of accounts but all unanticipated or unrealized gains should be ignored.
10. What is meant by accounting standards? Explain any two objectives of it.
11. Briefly explain your understanding of IND-AS.
12. What is the principle of Conservatism or Prudence?
13. Differentiate between cash basis and accrual basis of accounting.
14. Arun , a consultant, during the financial year 2015-2016 earned Rs.7,00,000. Out of which he received Rs.5,50,000. He incurred an expense of Rs.3,50,000 out of which Rs.40,000 are outstanding. He also received consultancy fee relating to previous year Rs. 65,000 and also paid Rs. 40,000 expenses of last year.
15. How will you deal with the following items in the accounting equation?
 - i. Interest due but not received Rs. 800.
 - ii. Rent received in advance Rs.1200.
 - iii. Insurance premium paid in advance Rs.1500.
 - iv. Salaries due but not paid Rs.2000.
16. Prepare accounting equations from the following transactions.
 - i. Started Business with cash 5,00,000
 - ii. Purchased a building from ram. Paid by raising a loan from SBI 10,00,000
 - iii. Paid interest on loan Rs. 40,000 and installment of Rs. 2,00,000
 - iv. Purchase goods from Rohan on credit 1,50,000

- v. Sold Goods costing Rs. 60,000 for Rs. 80,000 on credit to Mahesh.
- vi. Took Goods of Rs. 25,000 from Business for personal use.
- vii. Accrued interest 5000
- viii. Commission received in advance 20,000

17. Prove that the accounting equation is satisfied in all the following transactions of Rajnath Singh.

- i. Started Business with cash 50,000
- ii. Paid rent in advance 800
- iii. Purchase goods for cash Rs. 4,000 and on credit Rs. 3,000
- iv. Sold Goods for Rs. 12,000 costing Rs. 8,000
- v. Paid salary Rs. 450 and salary outstanding being Rs. 200
- vi. Bought typewriter for personal use. 6,000

18. Create an accounting equation on the basis of following transactions

- i. Pratap Singh commenced a business with cash Rs. 2,00,000, goods Rs. 60,000, Machinery Rs.1,50,000 and furniture Rs. 70,000
- ii. 1/3 rd of the above goods sold at a profit of 10% on cost and half of the payment is received in cash
- iii. Depreciation on machinery is provided at 20 % p.a.
- iv. Cash withdrawn for personal use Rs. 10,000
- v. Interest on drawings charged at 5 %.
- vi. Goods sold to Gupta for Rs. 20,000 and received a Bill Receivable of the same for 2 months.
- vii. Received Rs. 20,000 from Gupta against the Bill Receivable on its maturity.

19. Mahesh started a business on 1st April 2015 with a capital of 1,00,000 and borrowed Rs. 30,000 from a friend. He earned a profit of Rs. 5,000 during the year ended 31st Mar 2016 and withdrew Rs. 4,000 for private use. Find out his capital on 31st Mar 2016.

20. On 31st Mar 2015 total assets and external liabilities were Rs. 4,00,000 and Rs. 10,000 respectively. During the year the owner introduced capital of Rs. 40,000 and withdrawn Rs.

12,000 for personal use he made a profit of Rs. 60,000. Calculate the capital on 1st April 2

SUBJECT: History

Instructions:

- *Holidays Homework is compulsory for all the students.*
- *The holidays homework of History and Political Science is to be done in a scrap book.*

Prepare a project report on French Revolution with the help of below mentioned Point

- Louis XVI Government
- French Society during old regime
- French Philosophes
- Out Break of Revolution
- Constitution of 1791
- Declaration of Right of citizen
- Region of terror

DELHI PUBLIC SCHOOL JAMMU

HOILDAYS HOMEWORK

SUBJECT POLITICAL SCIENCE (028)

CLASS 11TH

Blue Print of Final Project files of Political Science

Topics:

1. Make Project on Constitution Making.
2. Make file of role of Fundamental Rights.
3. Collect data of Lok Sabha Election of 2019 on file.
4. Make of Project on How Executive works in India.
5. Make project on How Local Government works in India.

Make these projects on a file.

DELHI PUBLIC SCHOOL JAMMU
HOLIDAY ASSIGNMENT

CLASS: XI

SUBJECT: GEOGRAPHY

- Q1. Name the two tributaries which join to form river Ganga.
- Q2. Give any two reasons for the decline of wildlife in India
- Q3. What is relative humidity?
- Q4. What is the significance of ozone in the atmosphere?
- Q5. Give any two uses of tides.
- Q6. Give any two differences between forest cover & forest area.
- Q7. What are biological natural disasters?
- Q8. Name the highest peak of southern India.
- Q9. Give any two effects of global warming.
- Q10. Which of the following longitudes is the standard meridian of India?
[a] 63 30 E [b] 76 30 E [c] 82 30 E [d] 94 30 E
- Q11. With the help of diagrams explain spring & neap tides
- Q12. Define the following:
[a] food chain [b] endangered species [c] biodiversity
- Q13. [a] Discuss any four measures to deal with landslides.
[b] Discuss any two consequences of drought.
- Q14. Discuss any three factors that affect the temperature on the surface of the earth.
- Q15. Discuss any six effects of the earthquake on the surface of the earth.
- Q16. Define the following terms:
i] weathering ii] top soil iii] exogenic forces iv] landslide
v] rockfall vi] gradation
- Q17. With the help diagrams explain how land & sea breeze takes place.
- Q18. Discuss the three stages involved in disaster mitigation & management.
- Q19. With the help of diagrams explain the following features
[i] delta [ii] beach

Q20. Why is there time difference of nearly two hours between the western & the Eastern most parts of India?

Q21. Name the two important lakes of the Kashmir Himalayas.

Q22. Give any two methods to conserve soils.

Q23. What do you mean by farm forestry?

Q24. What are meteorological droughts?

Q25. What is thermocline?

Q26. What do you mean by dew?

Q27. Which of the following rivers flow through a rift valley:

[i] Narmada [ii] Chenab [iii] Godavari [iv] Yamuna

Q28. Which one of the following states of India have neither the international boundary nor a coastline:

[i] Gujarat [ii] Bihar [iii] Rajasthan [iv] Madhya Pradesh

Q29. [i] What do you understand by the term foodweb?

[ii] Discuss the economic role of biodiversity.

Q30. With the help of a diagram explain how the following features are formed:

[i] continental shelf [ii] mid-oceanic ridge

Q31. [i] Discuss important characteristics of the troposphere.

[ii] What do you mean by terrestrial radiation?

Q32. [i] Discuss any two human & two natural causes of flood.

[ii] Name the two districts of Rajasthan which fall under Extreme Drought Affected Areas .

Q33. Explain the following process of weathering:

[i] carbonation [ii] expansion & contraction due to temperature changes

Q34. [i] Discuss the significance of ozone in the atmosphere.

[ii] Discuss any four effects of global warming.

Q35. Discuss the three stages involved in disaster mitigation & management.

Q36. [i] Give any two direct evidences of the interior of the earth.

[ii] Discuss the important characteristics of the core.

Q37. With the help of diagrams explain stalactites & stalagmites

Q38. Write the names of the relief features marked on the map given as 1 to 6

Q39. [i] With the help of diagrams explain land & sea breezes.

[ii] How is Equatorial low pressure belt formed?

Q40. [i] Distinguish between eastern & western coasts. [4 points]

[ii] What do you mean by river basin?

[iii] With the help of a diagram explain dendritic pattern of drainage.

Q41. With the help of a diagram explain permanent wind belts of the earth.

Q42. [i] Why Rajasthan receives very low rainfall?

[ii] Discuss the Hot Weather season under the following headings:

- 1) months
- 2) temperature conditions
- 3) pressure conditions
- 4) precipitation

Q43 On the given outline map of India mark the following:

- 1) River Indus
- 2) Manas biosphere reserve
- 3) laterite soils
- 4) Capital of Andhra Pradesh
- 5) Gulf of Kutch

POWER POINT PRESENTATION AND PROJECT WORK

Each student is required to prepare the PPT and complete the project as per the topic given in the class.

DELHI PUBLIC SCHOOL JAMMU
HOLIDAY ASSIGNMENT

CLASS: XI

SUBJECT: Mathematics

Chapter 1

Sets



Concept: Representation of a set

Concepts:- Different types of sets – Subsets- Power sets – Universal set –

Operations on sets – Compliment of a set – Practical Problems.

Text book questions

Ex: 1 Questions 3, 4,5

Ex: 2 Questions 1, 2

Ex: 3 Questions 4, 5,6^{*}, 7^{*}

Ex: 4 Questions 4, 6, 9

Ex: 5 Questions 4^{*}, 5^{*}

Misc.Ex: Questions 8, 9, 11, 15^{**}, 16^{**}

Example Question: 34^{**}

Note: * *Important*

 ** *Very Important*

Extra/HOT questions

1. Write the following sets in set builder form

I) $\{1/4, 2/5, 3/6, 4/7, 5/8\}$

II) $\{ \dots, -5, 0, 5, 10, \dots \}$

III) $\{-4, 4\}$

2. Let A, B and C are three sets then prove the following:

i) $(A \cup B) \cap C = (A \cap C) \cup (B \cap C)$

ii) $(A \cap B) \cup (A \cap C) = A \cap (B \cup C)$

iii) $(A \cup B) \cap (A \cup C) = A \cup (B \cap C)$

iv) $(A \cap B) \cap (A \cap C) = A \cap (B \cap C)$

3. Draw Venn diagrams for the following sets:

i) $(A \cup B) \cap C$

ii) $(A \cap B) \cup (A \cap C)$

iii) $(A \cup B) \cap (A \cup C)$

iv) $(A \cap B) \cap (A \cap C)$

vi) $(A \cup B) \cap C$

vii) $(A \cap B) \cup (A \cap C)$

4. In a survey of 100 students, the number of students studying the various languages were found to be English only 18, English but not Hindi 23, English and Sanskrit 8, English 26, Sanskrit 48, Sanskrit and Hindi 8, Number of no language 24. Find

i) How many students were studying Hindi?

ii) How many students were studying English and Hindi [Ans:18,3]

5. In a survey of 25 students it was found that 15 had taken Maths, 12 had taken Physics and 11 had taken Chemistry, 5 had taken Maths and chemistry, 9 had taken Maths and Physics, 4 had taken Physics and Chemistry and 3 had taken all the three subjects. Find the number of students that had taken:

i) Only Chemistry

ii) Only Maths

iii) Only Physics

iv) Physics and Chemistry but not Maths

v) Maths and Physics but not Chemistry

vi) Only one of the subject

vii) At least one of the subjects

viii) None of the subjects [Ans:5, 4, 2, 1, 6, 11, 23, 2]

6. Of the members of three athletic team in a certain school, 21 are in the Basketball Team, 26 in the Hockey team and 29 in the Football team. 14 play hockey and basketball, 15 play hockey and football, 12 play football and basketball and 8 play all the three. How many

members are there in all?

[Ans:43]

7. In a survey of 100 persons it was found that 28 read magazine A, 30 read magazine B, 42 read magazine C, 8 read magazines A & B, 10 read magazine B&C and 3 read all the three. Find:

i) How many read none of the magazines?

ii) How many read magazine C only?

iii) How many read magazine A only?

iv) How many read magazine B & C but not A ?

[Ans:18,32,13,0]

8. Let A and B be two finites sets such that $n(A) = m$ and $n(B) = n$. If the ratio of number of elements of power sets of A and B is 64 and $n(A) + n(B) = 32$. Find the value of m and n .

[Ans:19, 23]

9. In a survey of 400 students of a school, 100 were listed as smokers and 150 as chewers of Gum, 75 were listed as both smokers and gum chewers. Find out how many students are neither smokers nor gum chewers. [Ans:225]

10. In a university out of 100 teachers, 15 like reading newspapers only, 12 like learning computers only and 8 like watching movies only on TV in the spare time. 40 like reading news papers and watching movies, 20 like learning computer and watching movies, 10 like reading news paper and learning computer, 65 like watching movies. Draw a Venn diagram and show the various portions and hence evaluate the numbers of teachers who:

- i) Like reading newspapers
- ii) Like learning computers
- iii) Did not like to do any of the things mentioned above. [62, 39, 1]

Chapter 2:

Relations and Functions

Concept:

Cartesian products of sets – equality of ordered pairs- triple product- relations- functions- domain- range- different types of functions- algebra of functions.

Notes:

- If $(a,b) = (c,d)$ then $a = c$ and $b = d$.
- $A \times B = \{ (x,y) / x \in A, y \in B \}$
- $A \times A \times A = \{ (x,y,z) / x, y, z \in A \}$
- A relation R is a subset of the Cartesian product.
- A function is a relation with every element of first set has one only one image in second set.
- The set of all first elements of the ordered pairs in a function is called domain.

- The set of all second elements of the ordered pairs in a function is called the range.
- Second set itself is known as co-domain.

Text book questions

Ex: 2.1

Questions: 1, 2^{*}, 5^{*}, 7^{*}

Ex: 2.2

Questions: 1, 2, 6, 7^{*}

Ex: 2.3

Questions: 2^{*}, 5^{*}

Misc. Ex:

Questions: 3^{*}, 4, 6, 8, 11, 12

Example

Question: 22^{*}

Extra/HOT questions



1. Find x and y if $(x^2 - 3x, y^2 - 5y) = (-2, -6)$.

2. Draw the graph of the following functions:

a) Modulus function in $[-4, 4]$

b) Signum function in $[-6, 6]$

c) Greatest integer function in $[-3, 4]$

3. Find the domain of the following functions:

a) $()$

b) $()$

c) $()$

←—————x—————→

4. Find the domain and range of the following functions:

a) $()$

b) $() \sqrt{\quad}$

c) $()$

d) $()$

"

5. If $()$

"

then show that $f(a) = f(1/a)$ and also evaluate

$$f(3/2)-f(2/3)$$

6. Let $R = \{(x,y) / x, y$

$\square \mathbb{N}, x+2$

also find the domain and range.

7. Let $A = \{x / x \text{ is a natural number } < 12 \}$ and R be a relation in A defined by (x,y) in R if $x+y = 12$, then write R .

8. A function f is defined on the set of natural numbers as

Write the function in roster form $\overline{\quad}$ also find the domain and range of the function.

9. Let $A = \{1,2,3,4\}$, $B = \{-1, 0, 1\}$ and $C = \{3, 4\}$ then verify the following:

a) $A \times (B \cup C) = (A \times B) \cup (A \times C)$

b) $A \times (B - C) = (A \times B) - (A \times C)$

10. If $A = \{-3, -2, 0, 2, 3\}$ write the subset B of $A \times A$ such that first element of B is either -3 or $+3$.

Chapter 3: Trigonometric functions

Concept:

Radian measure- relation between degree and radian- trigonometric functions- sign of trigonometric functions- trigonometric functions of sum and difference of two angles- trigonometric equations- sine formula- cosine formula- their applications.

Notes:

- If in a circle of radius r , an arc of length l , *subtends an angle*
radians then $l = r\theta$.
- Radian measure $= (\pi/180) \times$ degree measure.
- $\sin(-x) = -\sin x$

- $\cos(-x) = \cos x$
- $\cos(2n\pi+x) = \cos x$
- $\sin(2n\pi+x) = \sin x$
- $\sin x = 0$ gives $x = n\pi$ where $n \in \mathbb{Z}$
- $\cos x = 0$ gives $x = (2n+1)\pi/2$ where $n \in \mathbb{Z}$
- Refer text book for other formulas.

Text book questions

Ex:3.1	Questions: 1 [*] , 2 [*] , 3 [*] , 6
Ex:3.2	Questions: 6, 7, 8, 9, 10
Ex:3.3	Questions: 5, 6, 7 [*] , 11, 12 [*] , 14 [*] , 15 [*] , 16,
18, 21 [*] ,	22 ^{**} , 23 ^{**} , 24 [*] , 25 [*]
Ex:3.4	Questions: 5, 6, 7, 8, 9 ^{**}
Misc. Ex:	Questions: 2, 3, 5, 6, 7, 8 [*] , 9 [*] , 10 [*]
Examples:	Questions: 24 ^{**} , 25 ^{**} , 26 [*] , 27 [*] , 29 ^{**}

Supplementary text

Ex:3.5	Questions: 1, 3, 6, 7, 10, 11, 13,
14 ^{**} , 15 ^{**} , 16 ^{**}	
Examples:	Questions: 27 ^{**} , 28 [*]

Extra/ HOT Questions



1. The angles of a triangle are in A.P and the greatest angle is double the least.
Express the angles in degrees and radians

2. Show that the equation $\operatorname{cosec} x = \frac{4ab}{(a+b)^2}$ ($ab > 0$) is possible if $a=b$

3. Show that a) $\sin 150 \cos 120 + \cos 330 \sin 660 = -1$

() () ()

b) _____

() () ()

4. If $\tan x = \frac{\sin 2x}{1 - \cos 2x}$, show that $x + y = 45^\circ$

5. Show that the following:

a) $\cos 10^\circ \cos 50^\circ \cos 60^\circ \cos 70^\circ = \frac{3}{16}$

b) $\sin 10^\circ \sin 50^\circ \sin 60^\circ \sin 70^\circ = \frac{\sqrt{3}}{16}$

c) $\cos 20^\circ \cos 40^\circ \cos 60^\circ = \frac{1}{8}$

6. If $\sin x \sin y = \frac{1}{4}$ and $3 \tan x = 4 \tan y$ then prove that $\sin(x+y) = \frac{7}{16}$

7. Prove that _____

8. If $m \tan(x-30^\circ) = n \tan(x+120^\circ)$ then show that () _____

9. Solve the equation $4 \sin x \cos x + 2 \sin x + 2 \cos x + 1 = 0$

10. Solve the triangle when $c = 3.4 \text{ cm}$, $A = 25^\circ$, $B = 85^\circ$ [ans;
 $a = 1.53 \text{ cm}$, $b = 3.6 \text{ cm}$, $C = 80^\circ$

11. Show that for any parallelogram, if a and b are the sides of two non parallel sides, x is the angle between these two sides and d is the length of the diagonal that has a common vertex with sides a and b , then $d^2 = a^2 + b^2 + 2ab \cos x$

Subject : Computer Science

Session 2019-2020

Class: XI

1. Write full form of following:
MICR, OCR, TB, OMR, PB,ALU, DMP, VDU
2. Draw a labeled diagram of Functional components of a computer.
3. What function is performed by ALU and CU each.
4. Compare compiler and interpreter.
5. What is the basic function of memory? What is the measuring unit of memory?
6. Arrange the following printers in terms of speed and performance: Dot Matrix Printer, Laser Printer, Desk Jet Printer.
7. Identify the input and output devices, Scanner, Printer Bar Code Reader, smart card reader, Plotters, Screens, Web camera.
8. What is function of a web camera?
9. What is address bus? What is data bus.
10. Name the two types of computer memory. Also give two points of differences between the two.
11. Name the system software which loads all the program, coordinates the input and output devices.
12. What is function of BIOS.
13. Name some of the commonly used operating systems.
14. What is difference between compiler and interpreter.
15. What is word processor. Give examples.
16. What are Utility Software. Give example.
17. What is compression utility.
18. What is need of operating system?
19. What is device driver. What is need of it.
20. What is purpose of address bus and control bus.

Revise and learn chapters done in the class.

DELHI PUBLIC SCHOOL, JAMMU

SESSION (2019-20)

HOLIDAY HOMEWORK

CLASS:-XITH

SUB:-PHYSICAL EDUCATION

- Q1. What do you understand by Physical Education?
- Q2. What are functions of IOC and IOA?
- Q3. Write about the various career options in Physical education
- Q4 Give the field dimension and rules of game Volley Ball.
- Q5. Give the field dimension and rules of game Badminton.
- Q6. Make a list of records of Olympic Games.
- Q7. Write down the history of Ancient and Modern Olympic Games.
- Q8. Make a list of athletes who participated in Olympic Games for India.
- Q9. What are the changing trends in Physical Education.

DELHI PUBLIC SCHOOL, JAMMU
HOLIDAY HOMEWORK ASSIGNMENT (2019 – 20)

CLASS: XI

SUB: ECONOMICS

TOPICS-

Introduction to Micro Economics

Consumer Behaviour and Utility Analysis

Section-A (Very short answer questions)

1. Define economics as a positive science.
2. Define Marginal rate of transformation.
3. What is opportunity cost?
4. What is Law of diminishing marginal utility?

Section-B (Short answer questions)

5. Explain how scarcity and choice go together.
6. What does slope of the PPC show?
7. A shift from steam engine to diesel and electric engines has increased the carrying capacity of the Indian railways both for the passenger traffic and goods traffic. How would you reflect this change using the concept of PPC.
8. Differentiate between budget set and budget line.

Section-C (Long answer questions)

9. Discuss the properties of indifference curves.
10. Why does demand curve slopes downwards? Explain.
11. Discuss the central problems of an economy.
12. Explain the condition of consumer's equilibrium using utility analysis.

Project Work:

Prepare a comprehensive project report on one of the topics given below:

1. Production possibility curve.
2. Demand and its determinants.
3. Consumer's Equilibrium.
4. Indifference curve Analysis.

Scope of the project:

Following essentials are required to be fulfilled in the project:

- Meaning and definition.
- Application of the concept.
- Diagramatic explanation (if any).
- Numerical explanation related to the concept(if any).
- Student's own views/perception/opinion and learning from the topic.

The expectations of the project work are that:

project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written.
it will be an independent, self-directed piece of study.

Expected Checklist:

Introduction of topic/title

Identifying the causes, consequences and/or remedies

Various stakeholders and effect on each of them

Advantages and disadvantages of situations or issues identified

Short-term and long-term implications of economic strategies suggested in the course of research

Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project file

Presentation and writing that is succinct and coherent in project file

Citation of the materials referred to, in the file in footnotes, resources section, bibliography etc.