[English]
2019-20

1) Every teenager has a dream to achieve something in life. What they are going to become tomorrow depends on what our youth dream today.
Write an article about 200 words on 'What I want to be in life'.

2) Write an article on the given topics
(a) Importance of discipline.
(b) Importance of reading.
(c) Value education - a remedy for social evils.

3) You are John/Jennifer, the incharge of Tour & Excursion Club of Kendriya Vidyalaya, Lucknow. During the winter break you are planning to organise a tour to a place of historical importance.
Write a letter to the India travel & tour agency, Agra enquiring about the charges, facilities and all the necessary details.

4) Letter writing practice (at least two)

(Roll no)		(Sub/Topic)
1 - 10	→	(2) Letter to Editor
11 - 20	→	Complaint Letter
21 - 30	→	Making enquiry
31 - 40	→	Asking for giving information.

SHILPA YADAV
PGT (ENG)

शीतकालीन अवकाश के लिए गृहकार्य

विषय-हिंदी   कक्षा-ग्यारहवीं

1- शीतकालीन अवकाश के दौरान इन्ही तीन दिनों की डायरी लिखिए |

2- आप राजकीय प्रतिभा विकास विद्यालय में शिक्षक हैं और जवाहर लाल नेहरूविश्व विद्यालय से एम्.फिल. करना चाहते हैं | विभाग से एम्.फिल. करने की अनुमति प्राप्त करने के लिए पत्र लिखिए

3- विद्यालय में हुए पुरस्कार वितरण समारोह का कार्यवृत तैयार कीजिये |

4- कल्पना कीजिए कि आपने पत्रकारिता के क्षेत्र में अपना अध्ययन पूरा कर लिया है और किसी प्रसिद्ध अख़बार में पत्रकार पद के लिए आवेदन भेजना है | इसके लिए एक आवेदन पात्र लिखिए |

5- PT-2   परीक्षा में स्पीती में बारिश, रजनी,जामुन का पेड़,चंपा काले ...., गज़ल और आलो अंधारी पाठ से प्रश्न पूछे जायेंगे | इन पाठों के प्रश्नों को याद करिए |

6- 'जामुन का पेड़' कहानी की पटकथा तैयार{लिखिए) कीजिये |

Holiday home work

CLASS 11

PHYSICS

Q1 A body covers 12m in 2nd second and 20m in 4th second Find the acceleration and initial velocity of the particle.

Q2. State the no. of degree of freedom possessed by a diatomic gas molecule in space without vibration State law of equipartition of energy and give the expression of total energy possessed by diatomic gas molecule at a given temperature.

Q3. What is the phenomenon of capillarity. Derive an expression for the rise of liquid in a capillary tube. Give an example of capillarity from daily life.

Q4 What is surface energy? Derive the relation between surface tension and surface energy.

Q5. State and prove Bernoulli's theorem.

Q6. Prove that for one dimensional perfectly elastic collision between two bodies of same mass there is exchange of velocities.

Q7. Find percentage change in K.E. of a body when its momentum is increased by 50 percent.

Q8 .Obtain the expression for orbita l velocity,time period and altitude of a satellite.

Q9. Why Newton's second law is known as real law of motion.State and prove the law of conservation of linear momentum.

Q10 Find out an expression for trajectory of projectile.Derive an expression for (i) time of flight (ii) Horizontal range and (iii) maximum height for a projectile projected at an angle θ from the horizontal.

Q11 State first law of thermodynamics. Using this law prove that $C_P - C_V = R$.

Q12. State perpendicular and parallel axes theorem.Calculate M.I. of a thin disc of mass M and radius R about its diameter.

Q13. State Kepler's law of planetary motion. Define acc. Due to gravity. Derive the relation showing variation of acceleration due to gravity with dedth.

Q14 Explain laws of friction. Find relation between angle of friction and angle of repose.Give graph of limiting friction.

Q15. Derive an expression for excess pressure inside a liquid drop.

Q16. Derive an expression for the centripetal acceleration of a body moving with uniform speed v along a circular path of radius r. Find angular velocity of seconds hand of a watch.

Q17 Derive an expression for the time period of simple penduum without using dimensional analysis.

Q18 State parallelogram law of vector addition.Use it to determine magnitude and direction of resultant of two vectors A and B.

Q19 Define terminal velocity. Find the terminal velocity v of a sphere of radius r densityρ falling vertically through a viscous fluid of density σ and coefficient of viscosity η. Use this formula to explain the observed rise of air bubbles in a liquid.

Q20.Which is more elastic steel or rubber ,explain?

Q21.State and prove work-energy theorem.

Q22 Derive an expression for the rotational kinetic energy of a body and hence define moment of inertia.

Q23. How does the mean free path of a molecule in a gas is affected when

> **(i)   Temperature of gas is increased.**
> **(ii)   Pressure of gas is decreased.**

Q24 Define isothermal and adiabatic process.Derive a relation for workdone in isothermal process.

Q25. Given that displacement of particles is x=At+Bt^2 where t is time.Determine the dimensions of A and B.

Q26. Define unit vector. Find the value of ß so that the vector A=2i+ß j+k and 4i-2j+2k are perpendicular to each other.

Q27. State the postulates of kinetic theory of gases. Derive the expression of the pressure exerted by an ideal gas.

Q28 State second law of thermodynamics.Write the expression for the efficiency of heat engine and the coefficient of performance of refrigerator.

Q29 Find percentage change in momentum of body when its K.E. is increased by 300 percent?

Q30. The velocities of three molecules are3V,4V and 5V.Determine the root mean square velocity.

Q31 The absolute temperature of a gas is increased 4 times of its original value.What will be the change in the r.m.s. velocity of its molecule.

Q32. Draw stress-strain curve for a loaded wire and hence explain the terms elastic limit and permanent set.

Q33.Define centre of mass.Derive an expression for centre of mass of two particle system.

Q 34 Two masses $m_1$and m_2 are connected at the two ends of an inextensible string.The string passes over a smooth frictionless pulley. Calculate the acceleration of the masses and the tensions in the string.

Q35 Define coefficient of restitution. Give its value for (i) perfectly elastic and (ii) perfectly inelastic collision.

Q36. The displacement of a moving particle is given by $x=6+18t+9t^2$. What is its velocity and acceleration at t=2s ?

Q37. Why cooking of food becomes tough at higher altitudes ?

Q38. Explain why deep water runs slow?

Q39. What is meant by banking of roads?Obtain an expression for the maximum speed with which a vehicle can safely turn on curved road banked at an angle θ ?

Q40. Two bodies of masses 20 kg and 10 kg moving in the same direction along the same straight line with velocities 10m/s and 20m/s respectively What are their velocities after collision when the collision is perfectly elastic?

Q41. State law of conservation of angular momentum.Explain whyice-skater or ballet dancer fold their arms?

Q42 If the angular momentum is conserved in a system whose moment of inertia is decreased,will its rotational kinetic energy be also conserved?

WINTER BREAK HOMEWORK

CLASS XI   Important question   maths

Name of Chapter/Exercise	Page No.	Question /Example number/Previous Year Session Ending exam Questions
Sequence and series Ex.9.1	181	14
,,,,,Ex.9.2	185	9,13,15,16
	191	Example no 18
,,,,,,,, Ex 9.3	193	23,25,28,29
	195	Example 19
,,,,,,,,Ex 9.4	196	5,7
	198	Example 24
Miscellaneous Exercise	199,200	10,12,14,18,19,21,24,25
Straight line Ex- 10.1	212	7,13
	220	11,13,15,18
,,,,,,,,,, Ex 10.3	227,228	5,10,14,16,18
	231	Example 24
Miscellaneous Exercise	233	5,14,15,17,18,19,21,23
Limits & Derivatives Ex.13.1	301,302	6,10,15,17,20,22,23,28,32
,,,,,,,,,,,,,Ex.13.2	313	Practice all Question 9,11
	314	Example19, 20,22
Miscellaneous Exercise	317,318	9,13,17,19,22,26,28,30
Probability Ex 16.1	387	9,10,12,15
,,,,,,,,,,,Ex.16.2	393	3,5
	400	Example 10,11,12,13
,,,,,,,, Ex 16.3	404	7,9,10,18,21
Miscellaneous Exercise	409	1,5,9,10

	HOME WORK (WINTER BREAK) CLASS XI A SOME BASIC CONCEPTS OF CHEMISTRY
1	The density of 3 M solution of NaCl is 1.25 g mL^{-1}. Calculate molality of the solution.
2	Calculate the amount of carbon dioxide that could be produced when (i) 1 mole of carbon is burnt in air. (ii) 1 mole of carbon is burnt in 16 g of dioxygen. (iii) 2 moles of carbon are burnt in 16 g of dioxygen.
3	In three moles of ethane (C2H6), calculate the following : (i) Number of moles of carbon atoms. (ii) Number of moles of hydrogen atoms. (iii) Number of molecules of ethane
4	If the density of methanol is 0.793 kg L−1, what is its volume needed for making 2.5 L of its 0.25 M solution?
5	Dinitrogen and dihydrogen react with each other to produce ammonia according to the following chemical equation: N2 (g) + H2 (g) → 2NH3 (g) (i) Calculate the mass of ammonia produced if 2.00 × 103 g dinitrogen reacts with 1.00 ×103 g of dihydrogen. (ii) Will any of the two reactants remain unreacted? (iii) If yes, which one and what would be its mass?
	STRUCTURE OF ATOM
6	What are the frequency and wavelength of a photon emitted during a transition from n = 5 state to the n = 2 state in the hydrogen atom?
7	(i) Calculate the number of electrons which will together weigh one gram. (ii) Calculate the mass and charge of one mole of electrons.
8	Which of the following are isoelectronic species i.e., those having the same number of electrons? Na$^+$, K$^+$, Mg^{2+}, Ca^{2+}, S^{2-}, Ar
9	What transition in the hydrogen spectrum would have the same wavelength as the Balmer transition n = 4 to n = 2 of He+ spectrum ?
	CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES
10	a. How would you justify the presence of 18 elements in the 5th period of the Periodic Table? b. What would be the IUPAC name and symbol for the element with atomic number 120?
11	a.Which of the following species will have the largest and the smallest size? Mg, Mg^{2+}, Al, Al^{3+} b. Show by a chemical reaction with water that Na2O is a basic oxide and Cl2O7 is an acidic oxide.
12	Which element do you think would have been named by (i) Lawrence Berkeley Laboratory (ii) Seaborg's group?
13	Consider the following species : N $^{3-}$, O^{2-}, F$^-$, Na$^+$, Mg^{2+} and Al^{3+} (a) What is common in them? (b) Arrange them in the order of increasing ionic radii.
	CHEMICAL BONDING AND MOLECULAR STRUCTURE
14	Draw the Lewis structures for the following molecules and ions : H2 S, SiCl4 , BeF2 , 2 CO3 − , HCOOH
15	Discuss the shape of the following molecules using the VSEPR model: BeCl$_2$, BCl$_3$, SiCl$_4$, AsF$_5$, H$_2$ S, PH$_3$
16	Although geometries of NH3 and H2O molecules are distorted tetrahedral, bond angle in water is less than that of ammonia. Discuss.
17	Write the resonance structures for SO$_3$ and NO$_3$ $^-$.
18	Which out of NH3 and NF3 has higher dipole moment and why ?
19	Describe the change in hybridisation (if any) of the Al atom in the following reaction. AlCl +Cl$^-$ $\longrightarrow$ AlCl$_4$ $^-$
20	Distinguish between a sigma and a pi bond.
21	Describe the hybridisation in case of PCl5 . Why are the axial bonds longer as compared to equatorial bonds ?
22	What is meant by the term bond order ? Calculate the bond order of : N$_2$, O$_2$, O$_2$ $^+$ and O$_2$ $^-$.
	STATES OF MATTER
23	A balloon is filled with hydrogen at room temperature. It will burst if pressure exceeds 0.2 bar. If at 1 bar pressure the gas occupies 2.27 L volume, upto what volume can the balloon be expanded ?
24	Using the equation of state pV=nRT; show that at a given temperature density of a gas is proportional to gas pressure p
25	At 0°C, the density of a certain oxide of a gas at 2 bar is same as that of dinitrogen at 5 bar. What is the molecular mass of the oxide?
26	Pressure of 1 g of an ideal gas A at 27 °C is found to be 2 bar. When 2 g of another ideal gas B is introduced in the same flask at same temperature the pressure becomes 3 bar. Find a relationship between their molecular masses.
27	Critical temperature for carbon dioxide and methane are 31.1 °C and −81.9 °C respectively. Which of these has stronger intermolecular forces and why?
28	(**EQUILIBRIUM**)Classify the following species into Lewis acids and Lewis bases and show how these act as such: (a) HO − (b)F − (c) H+ (d) BCl3
29	a) What will be the conjugate bases for the following Brönsted acids: HF, H$_2$ SO$_4$ and HCO$_3$ $^-$? b) Write the conjugate acids for the following Brönsted bases: NH$_2$ $^-$, NH$_3$ and HCOO$^-$.
	At a certain temperature and total pressure of 105Pa, iodine vapour contains 40% by volume of I atoms I$_2$ (g) ⇌ 2I (g) Calculate Kp for the equilibrium

*Prepare Short notes of following chapters (Formula and Definitions) 1. STRUCTURE OF ATOM, 2.CHEMICAL BONDING AND MOLECULAR STRUCTURE, 3.EQUILIBRIUM,4. THE s -BLOCK ELEMENTS, 5.THE p -BLOCK ELEMENTS

B.K. Sharma

31	A sample of HI(g) is placed in flask at a pressure of 0.2 atm. At equilibrium the partial pressure of HI(g) is 0.04 atm. What is Kp for the given equilibrium ? 2HI (g) $\rightleftharpoons$ H2 (g) + I2 (g)
32	A mixture of 1.57 mol of N2 , 1.92 mol of H2 and 8.13 mol of NH3 is introduced into a 20 L reaction vessel at 500 K. At this temperature, the equilibrium constant, Kc for the reaction N2 (g) + 3H2 (g)$\rightleftharpoons$ 2NH3 (g) is 1.7 × 102 . Is the reaction mixture at equilibrium? If not, what is the direction of the net reaction?
33	What is meant by the conjugate acid-base pair? Find the conjugate acid/base for the following species: HNO₂ , CN⁻ , HClO₄, F⁻ , OH⁻ , CO₃ ²⁻, and S²⁻
34	The concentration of hydrogen ion in a sample of soft drink is 3.8 × 10–3 M. what is its pH?
35	The pH of a sample of vinegar is 3.76. Calculate the concentration of hydrogen ion in it.
	THE s -BLOCK ELEMENTS
36	Why does the solubility of alkaline earth metal hydroxides in water increase down the group?
37	Beryllium and magnesium do not give colour to flame whereas other alkaline earth metals do so. Why ?
38	What happens when (i) magnesium is burnt in air (ii) quick lime is heated with silica (iii) chlorine reacts with slaked lime (iv) calcium nitrate is heated ?
39	What happens when (i) sodium metal is dropped in water ? (ii) sodium metal is heated in free supply of air ? (iii) sodium peroxide dissolves in water ?
40	How would you explain the following observations? (i) BeO is almost insoluble but BeSO4 in soluble in water, (ii) BaO is soluble but BaSO4 is insoluble in water, (iii) LiI is more soluble than KI in ethanol.
	THE p -BLOCK ELEMENTS
41	Explain (1)Why does boron triflouride behave as a Lewis acid ?(2) Is boric acid a protic acid ? (3) What happens when boric acid is heated
42	What happens when (a) Borax is heated strongly, (b) Boric acid is added to water, (c) Aluminium is treated with dilute NaOH, (d) BF₃ is reacted with ammonia ?
43	What do you understand by (a) inert pair effect (b) allotropy and (c) catenation?
44	Write balanced equations for: (i) BF₃ + LiH $\rightarrow$ (ii) B₂H₆ + H₂O $\rightarrow$ (iii) NaH + B₂H₆ $\rightarrow$ (iv)Al + NaOH $\rightarrow$ (v) B₂H₆ + NH₃ $\rightarrow$
45	Give reasons : (i) Conc. HNO₃ can be transported in aluminium container. (ii) A mixture of dilute NaOH and aluminium pieces is used to open drain. (iii) Graphite is used as lubricant. (iv) Diamond is used as an abrasive. (v) Aluminium alloys are used to make aircraft body.
	ORGANIC CHEMISTRY – SOME BASIC PRINCIPLES AND TECHNIQUES
46	How many σ and π bonds are present in each of the following molecules? (a) HC≡CCH=CHCH₃ (b) CH₂=C=CHCH₃ (c) CH₂=C=CH₂ (d)CH₃NO₂ (e) HCONHCH₃
47	Write the state of hybridisation of carbon in the following compounds and shapes of each of the molecules. (a) H₂C=O, (b) CH₃F, (c) HC≡N (c) CH₂=C=O (d) CH₃CH=CH₂ (e) (CH₃) ₂CO
48	On complete combustion, 0.246 g of an organic compound gave 0.198g of carbon dioxide and 0.1014g of water. Determine the percentage composition of carbon and hydrogen in the compound.
49	In Dumas' method for estimation of nitrogen, 0.3g of an organic compound gave 50mL of nitrogen collected at 300K temperature and 715mm pressure. Calculate the percentage composition of nitrogen in the compound. (Aqueous tension at 300K=15 mm)
50	A sample of 0.50 g of an organic compound was treated according to Kjeldahl's method. The ammonia evolved was absorbed in 50 ml of 0.5 M H2SO4. The residual acid required 60 mL of 0.5 M solution of NaOH for neutralisation. Find the percentage composition of nitrogen in the compound.
51	Write bond line formulas for : Isopropyl alcohol, 2,3-Dimethyl butanal, Heptan-4- one.
52	Which of the two: O₂NCH₂CH₂O⁻ or CH₃CH₂O⁻ is expected to be more stable and why ?
53	Draw the resonance structures for the following compounds. Show the electron shift using curved-arrow notation. (a) C₆H₅OH (b) C₆H₅NO₂ (c) C₆H₅–CHO
54	(i) Why is nitric acid added to sodium extract before adding silver nitrate for testing halogens? (ii) Will CCl4 give white precipitate of AgCl on heating it with silver nitrate? Give reason for your answer.
55	Explain the reason for the fusion of an organic compound with metallic sodium for testing nitrogen, sulphur and halogens.

*Prepare one project for Chemistry Practical and Practical Records for session ending Examination

PT-2

Syllabus for ~~half yearly~~ Exams. **Redox, Hydrogen** THE s -BLOCK ELEMENTS, THE p -BLOCK ELEMENTS, ORGANIC CHEMISTRY – SOME BASIC PRINCIPLES AND TECHNIQUES Upto Hyperconjugation

KV BHEL JAGDISHPUR
HOLIDAY HOMEWORK
CLASS XI (CS)

NOTE: ATTEMPT ALL QUESTIONS .QUESTION HAVING PARTS MUST BE ANSWERED IN A SEQUENCE.

Q 1. (a) What is the difference between ''%'' and ''_'' wild card characters with reference to LIKE clause of MySQL ?

(b)   Consider the following table named ''EXAM'' with details of marks. Write command of MySQL for (i) to (iv) and output for (v) to (vii).

Table : EXAM

Adno	SName	Percentage	Clsection	Stream
R001	Sushant	90.2	12A	Science
R002	Vaidyanath	80.5	12B	Humanities
R003	Miara	68.9	12B	Science
R004	Niara	96.0	12A	Commerce
R005	Shinjini	88.9	12D	Commerce

(i)   To display all information of the students of humanities in descending order of percentage.

(ii)   To display Adno, Name, Percentage and Stream of those students whose name is less than 6 characters long.

(iii) To add another column Bus_Fees with datatype and size as Decimal (8,2).

(iv)   To increase percentage by 2% of all the Humanities students.

(v)   SELECT COUNT(*) FROM Exam;

(vi)   SELECT SName, Percentage FROM EXAM
          WHERE Name LIKE "N%";

(vii) SELECT ROUND(Percentage,0) FROM EXAM
          WHERE Adno="R005";

Q 2. (a) Write MySQL command to create the table 'Toyz' with the following structure and constraint.

Table : TOYZ

Colunm_Name	DataType(size)	Constraint
Toy_no	Int(10)	Primary Key
Toy_name	Varchar(20)	
Type	Char(10)	
Price	Decimal(8,2)	
Colour	Varchar(15)	

Q 3. (a) What is the purpose of DROP TABLE command in MySql ? How is it different from DELETE command?

(b) Table Employee has 4 records and Table Dept has 3 records in it. Mr. Jain wants to display all information stored in both of these related tables. He forgot to specify equi-join condition in the query. How many rows will get displayed on execution of this query?

(c) Consider the table RESULT given below Write commands in MySql for (i) to(iv) and output for (v) to (vii) :

Table: Result

No	Name	Stipend	Subjet	Average	Division
1	Sharon	400	English	38	THIRD
2	Amal	680	Mathematics	72	FIRST
3	Vedant	500	Accounts	67	FIRST
4	Shakeer	200	Informatics	55	SECOND
5	Anandha	400	History	85	FIRST
6	Upasna	550	Geography	45	THIRD

(i) To list the names of those students, who have obtained Division as FIRST in the ascending order of NAME.

(ii) To display a report listing NAME, SUBJECT and Annual stipend received assuming that the stipend column has monthly stipend.

(iii) To count the number of students, who have either Accounts or Informatics as Subject.

(iv) To insert a new row in the table EXAM:

6, "Mohan", 500, "English", 73, "Second"

(v)   SELECT AVG (Stipend) FROM EXAM WHERE DIVISION = "THIRD" ;

(vi) SELECT COUNT(DISTINCT Subject) FROM EXAM;

(vii) SELECT MIN(Average) FROM EXAM WHERE Subject = "English";

Q 4. (a) Anita has created the following table with the name 'Order'.

Table : Order

Column Name	Constraint
OrderId	Primary Key
OrderDate	Not Null
OrderAmount	
StoreId	

One of the rows inserted is as follows :

OrderId	OrderDate	OrderAmount	StoreId
O101	2015-02-12	34000	S104

(i)   What is the data type of columns OrderId and OrderDate in the table Order ?

(ii) Anita is now trying to insert the following row :

OrderId	OrderDate	OrderAmount	StoreId
O102	NULL	59000	S105

Will she be able to successfully insert it ? Give reason.

(b) Write the output of the following SQL queries :

(i)   SELECT MID('BoardExamination',2,4);

(ii) SELECT ROUND(67.246,2);

(iii) SELECT INSTR('INFORMATION FORM','FOR');

(iv) SELECT DAYOFYEAR('2015-01-10');

(c) Write commands in SQL for (i) to (iv) and output for (v) and (vi).

Table : Store

StoreId	Name	Location	City	NoOfEmployees	DateOpened	SalesAmount

S101	Planetfashion	KarolBagh	Delhi	7	2015-10-16	300000
S102	Trends	Nehru Nagar	Mumbai	11	2015-08-09	400000
S103	Vogue	Vikas Vihar	Delhi	10	2015-06-27	200000
S104	Superfashion	Defence Colony	Delhi	8	2015-02-18	450000
S105	Rage	Bandra	Mumbai	5	2015-09-22	600000

(i) To display name, location, city, SalesAmount of stores in descending order of SalesAmount.

(ii) To display names of stores along with SalesAmount of those stores that have 'fashion' anywhere in their store names.

(iii) To display Stores names, Location and Date Opened of stores that were opened before 1st March, 2015.

(iv) To display total SalesAmount of each city along with city name.

(v) `SELECT distinct city FROM store;`

(vi) `SELECT Name, length (name), left (name, 3) FROM Store where NoOfEmployees<3;`

Q 5.

(a) Write SQL query to create a table 'Event' with the following structure :

Field	Type	Constraint
EventId	Varchar(5)	PRIMARY KEY
EventName	Varchar(30)	NOT NULL
Location	Varchar(50)	
ClientID	Integer	
EventDate	Date	

ASSIGNMENT FOR WINTERBREAK 2019-20

CLASS XI BIOLOGY

1. Z, scheme of light reaction. cyclic photophosphorylation. Calvin cycle, T.S. Leaf showing kranz anatomy.

2. Steps of Glycolysis Pathways of anaerobic respiration Kerebs cycle, A.T.P. synthesis in mitochondria.

3. Sigmoid growth curve, Differences b/w short day & long day plants.

4. T.S. of a gut, Duct systems. liver, gall bladder, and pancreas. oxygen dissociation curve,

5. Blood groups and Donor compatibility, section of a human heart.

6. ECG. diagrammatic representation. Structure of a nephron. Reabsorption & Secution of major substances at different parts of the nephron. Counter current mechanism.