ESTD:-2013

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R.M PUBLIC SCHOOL

(CBSEAFFILIATIONNO.730072)

SESSION–2023-24
Winter Holidays Homework
Class: - 11TH SCIENCE

Circular No. : 930 **Date : 28-12-2023**

Dear Parents / Students

Greetings from RMPS Fraternity!

Books become permanent companions. Sometimes, they are born before us; they guide us during our life journey and continue for many generations.

……A.PJ ABDUL KALAM ……

Winter vacations are a delightful escape from the routine, offering a chance to embrace the chilly enchantment of the season. Whether it's snuggling up with a book by the fireplace, embarking on a snowy adventure, or simply relishing the festive spirit, these moments become a tapestry of warmth in the midst of the cold. The serene landscapes draped in snow create a picturesque backdrop for relaxation and reflection, making winter vacations a cherished interlude to recharge and appreciate the beauty of the season. Here are some holiday activities designed for creative utilization of time. Give a flight to your imagination and spend time purposely. This winter vacation the holiday

homework so designed by the mentors of the school is a medium for you all to achieve the motto of "Fun and Learn".

REMEMBER

*Neatness and hygiene are part of your routine.

*Holidays homework is a part of subject enrichment and will be assessed on the basis of creativity and efforts of the students.

* It's a perfect time to enhance your speaking skills and vocabulary by conversing in English with your family and siblings.

*Reading is essential for those who seek to rise above the ordinary. Spend your quality time with reading purposeful books.

* A beautiful handwriting makes a good impression. Practice one page of English and Hindi writing daily.

* Schedule your time for activities so that there is no piling up for the last moment.

* Holiday homework should be your authentic creative work.

* The marks of holiday homework will be included in your Term-2 exam. Kindly deposit the holiday homework on below mentioned slots, later it will not be accepted by the class teacher.

SUBMIT HOLIDAYS HOMEWORK ACCORDING TO THE GIVEN SCHEDULE

DATE	SLOTS	ROLL NO.	TIMING
09-01-2024	FIRST	1 TO 15	09:00 am to 09:30 am
	SECOND	16 onwards	09:30 am to 10:00 am

SR.NO	SUBJECT	TOPICS	ACTIVITY	MATERIAL REQUIRED
1	ENGLISH	Q1. Look at the following sentences. Rearrange them to form meaningful sentences. Write the correct sentence in your answer sheet against the correct blank. 1.measured/intensity/in/decibel /sound/ is/units 2.West Bengal – Bhutan/ the technical/are/at/network/the	**Design a poster on answer sheet Your school is organising Sports day. Prepare a poster to create**	File,colourful sheets. Glue, scissor sketch, pen and picture.

		/currently/an/railway/advanced /Stage/studies/for 3.Its approval/the union/sixth/gave/for the/of/pay commission/cabinet/setting up/the Q2. Write a speech in about 150 words on the topic "The Role Of youth In Shaping a more Compassionate Society". Q3. You are the director of coaching academy. Write an advertisement for the publication in the newspaper for admission to the various courses being provided in your institute.	**awareness regarding the importance of sports in our daily lives.**	

SR.NO	SUBJECT	TOPICS	ACTIVITY	MATERIAL REQUIRED
2	PHYSICS	Q1. If heat is supplied to an ideal gas in an isothermal Process. (1) The internal energy of the gas will increase (2) The gas will do positive work (3) The gas will do negative work (4) The said process is not possible Q2.When an ideal diatomic gas is heated at constan pressure, the fraction of the heat energy supplied which increases the internal energy of the gas will be a) 2/5 b) 3/5 c) 3/7 d)5/7 Q3. The thermal capacity of any body is (1) A measure of its capacity to absorb heat (2) A measure of its capacity to provide. Heat (3) The quantity of heat required to raise its Temperature by a unit degree (4) The quantity of heat required to raise the temperature of a unit mass of the body by a unit degree	Prepare a working model on pulley crane to lift deadload	Rope, cable, plastic pulley, tires, high-speed motor, hook, caster wheel etc

		Q4.Explain Bernouli's theorem and derive it's expression. Q5.what is kinetic interpretation of temperature. Or Kinetic energy and temperature.		

Note: Biology students will not make physics model.

SR. NO	SUBJECT	TOPICS	ACTIVITY	MATERIAL REQUIRED
3	BIOLOGY	Answer the following questions 1.Explain the disorders of muscular and skeletal system. 2.Draw a diagrammatic view of human skull 3.Describe the mechanism of urine formation with the help of diagrammatic representation of nephron showing blood vessels duct and tubule. 4.Describe the structure of neuron with the help of diagram. 5.Explain the central neural system with the help of diagram showing sagittal section of the human brain.	Prepare a working model of hemodialysis	Plastic bottle, cardboard, pipes, battery, small boxes etc

SR.NO	SUBJECT	TOPICS
4	**MATHS**	Q1. How many litres of water will have to be added to 1250 litres of 45% solution of acid so that the resulting mixture will contain more than 25% but less than 30% acid content? Q2. Differentiate cosx,logx,tanx w.r.t. x using abnitio method. Q3. Find all pairs of consecutive even positive integers, both of which are larger than 5 such that their sum is less than 23. Q4. If $(x + iy)^3 = u + iv$, then show that $u/x + v/y = 4(x^2-y^2)$. Q5. Find mean and variance of first n natural numbers.

SR.NO	SUBJECT	TOPICS
5	COMPUTER SCIENCE	1. Create a power point presentation on topic "CYBER SAFETY". 2. Write a program in python to take necessary inputs from a user and perform the following operations using statistics and Math modules. • To calculate the expression xn • To calculate the absolute value of a number. • To calculate area of a circle where the values of pi will be taken from the constant of the math module. • To calculate the median of a list of 10 integers. • To calculate the square root of a number. 3. Convert the following: • (11000111)2 = ( )10 • (1CAF)16 = ( )2 4. Write a program in python that reads a line, then counts words and displays how many words are there in the line. 5. Write a program in python which assigns grades in an exam as per the following conditions: MARKS GRADES

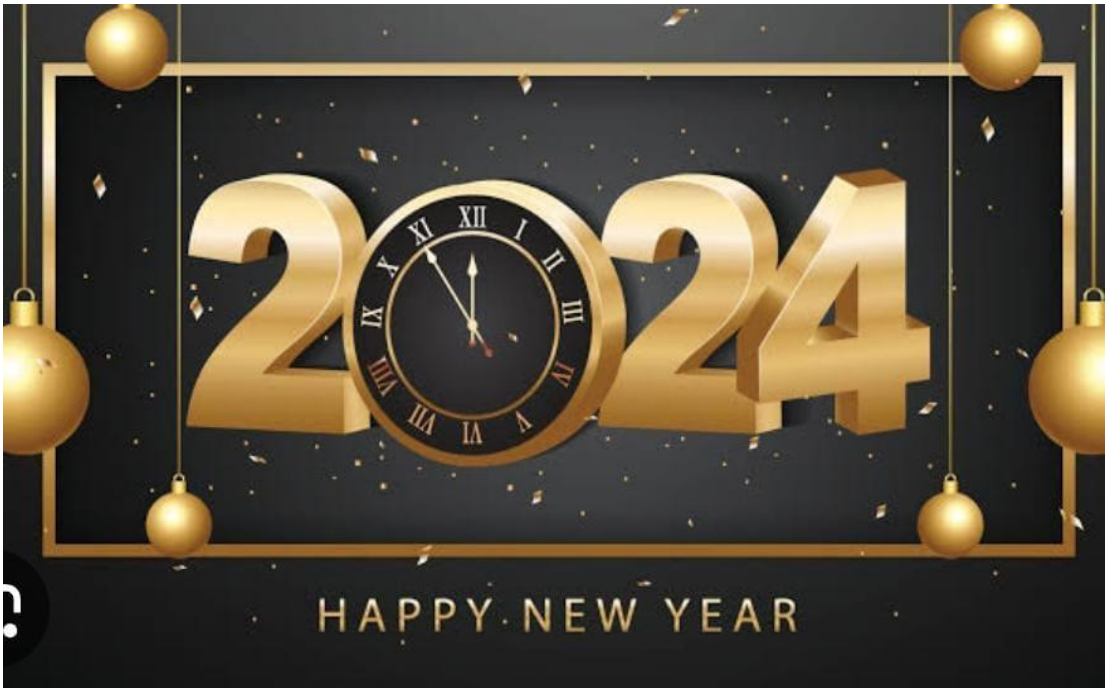
		>90 and <=100 "A" >80 and <=90 "B" >60 and <=80 "C" otherwise "D" input the marks of "n" students and store them in a list and then store the grades in another list as per the above conditions. Display marks and grades of all the students having grades "B" and "D".

SR.NO	SUBJECT	TOPICS
6	CHEMISTRY	Qno1: Calculate the molar mass of the following: (i) H2O (ii) CO2 (iii) CH4 Qno2: Calculate the mass per cent of different elements present in sodium sulphate (Na2SO4). Qno3: Determine the empirical formula of an oxide of iron, which has 69.9% iron and 30.1% dioxygen by mass. Qno4: 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. Qno5: Calculate the mass of sodium acetate (CH3COONa) required to make 500 mL of 0.375 molar aqueous solution. Molar mass of sodium acetate is 82.0245 g mol–1. Qno6: Calculate the wavelength, frequency and wavenumber of a light wave whose period is 2.0 × 10–10s. Qno7: What is the number of photons of light with a wavelength of 4000 pm that provide 1J of energy? Qno8: A photon of wavelength 4 × 10–7 m strikes on metal surface, the work function of the metal being 2.13 eV. Calculate (i) the energy of the photon (eV), (ii) the kinetic energy of the emission, and (iii) the velocity of the photoelectron (1 eV= 1.6020 × 10–19 J). Qno9: Electromagnetic radiation of wavelength 242 nm is just sufficient to ionise the sodium atom. Calculate the ionisation energy of sodium in kJ mol–1. Qno10: A 25 watt bulb emits monochromatic yellow light of wavelength of 0.57μm. Calculate the rate of emission of quanta per second. QNo11: What is the lowest value of n that allows g orbitals to exist? QNo12: Why do elements in the same group have similar physical and chemical properties? Qno13: What does atomic radius and ionic radius really mean to you? Qno14: How do atomic radius vary in a period and in a group? How do you explain the variation? Qno15: What do you understand by isoelectronic species? Name a species that will be isoelectronic with each of the following atoms or ions. (i) F– (ii) Ar (iii) Mg2+ (iv) Rb+ Qno16: Consider the following species : N3–, O2–, F–, Na+, Mg 2+ and Al3+ (a) What is common in them? (b) Arrange them in the order of increasing ionic radii. Qno17: Explain why cation are smaller and anions larger in radii than their parent atoms? Qno18: Apart from tetrahedral geometry, another possible geometry for CH4

		is square planar with the four H atoms at the corners of the square and the C atom at its centre. Explain why CH4 is not square planar ? Qno19: Explain why BeH2 molecule has a zero dipole moment although the Be–H bonds are polar. Qno20: Which out of NH3 and NF3 has higher dipole moment and why ? Qno21: What is meant by hybridisation of atomic orbitals? Describe the shapes of sp, sp2, sp3 hybrid orbitals. Qno22: Distinguish between a sigma and a pi bond. Qno23: Explain the formation of H2 molecule on the basis of valence bond theory. Qno24: Write the important conditions required for the linear combination of atomic orbitals to form molecular orbitals. QNo25: In a process, 701 J of heat is absorbed by a system and 394 J of work is done by the system. What is the change in internal energy for the process? QNo26: Calculate the number of kJ of heat necessary to raise the temperature of 60.0 g of aluminium from 35°C to 55°C. Molar heat capacity of Al is 24 J mol–1 K–1 Qno27: Enthalpy of combustion of carbon to CO2 is –393.5 kJ mol–1. Calculate the heat released upon formation of 35.2 g of CO2 from carbon and dioxygen gas. QNo28: For an isolated system, $\Delta U = 0$, what will be ΔS ? Qno29: At 450K, Kp = 2.0 × 1010/bar for the given reaction at equilibrium. $2SO2(g) + O2(g) \rightleftharpoons 2SO3(g)$ What is Kc at this temperature ? Qno30: What is meant by the conjugate acid-base pair? Find the conjugate acid/base for the following species: HNO2, CN–, HClO4, F –, OH–, CO32–, and S2– Qno31: Which of the followings are Lewis acids? H2O, BF3, H+, and NH4+ Qno32: What will be the conjugate bases for the Brönsted acids: HF, H2SO4 and HCO–3? Qno33: Write the conjugate acids for the following Brönsted bases: NH2–, NH3 and HCOO– Qno34: The species: H2O, HCO3–, HSO4– and NH3 can act both as Brönsted acids and bases. For each case give the corresponding conjugate acid and base. Qno35: The concentration of hydrogen ion in a sample of soft drink is 3.8 × 10–3 M. what is its pH? Qno36: The pH of a sample of vinegar is 3.76. Calculate the concentration of hydrogen ion in it. Qno37: Write formulas for the following compounds: (a) Mercury(II) chloride (b) Nickel(II) sulphate c) Tin(IV) oxide (d) Thallium(I) sulphate e) Iron(III) sulphate (f) Chromium(III) oxide Qno38: Suggest a list of the substances where carbon can exhibit oxidation states from –4 to +4 and nitrogen from –3 to +5. Qno39: While sulphur dioxide and hydrogen peroxide can act as oxidising as well as reducing agents in their reactions, ozone and nitric acid act only as oxidants. Why ? Qno40: The compound AgF2 is unstable compound. However, if formed, the compound acts as a very strong oxidising agent. Why ? Qno41: Explain why alkyl groups act as electron donors when attached to a π system. QNo42: What are electrophiles and nucleophiles ? Explain with examples Qno43: Explain the terms Inductive and electromeric effects. Which electron displacement effect explains the following correct orders of acidity of the carboxylic acids?

		(a) Cl3CCOOH > Cl2CHCOOH > ClCH2COOH (b) CH3CH2COOH > (CH3)2CHCOOH > (CH3)3C.COOH Qno44: An alkene 'A' on ozonolysis gives a mixture of ethanal and pentan-3-one. Write structure and IUPAC name of 'A'. Qno45: An alkene 'A' contains three C – C, eight C – H σ bonds and one C – C Π bond. 'A' on ozonolysis gives two moles of an aldehyde of molar mass44 u. Write IUPAC name of 'A'. Qno46: Propanal and pentan-3-one are the ozonolysis products of an alkene? What is the structural formula of the alkene? Qno47: Write chemical equations for combustion reaction of the following Hydrocarbons: (i) Butane (ii) Pentene Qno48: Why does benzene undergo electrophilic substitution reactions easily and nucleophilic substitutions with difficulty? Qno49: How would you convert the following compounds into benzene? (i) Ethyne (ii) Ethene (iii) Hexane Qno50: Write structures of all the alkenes which on hydrogenation give 2-methylbutane.

SR.NO	SUBJECT	TOPICS
7	PHE	Q1. Explain yogic kriyas in details. Q2 Define Training .what is the concept of Training and importance? Q3 Explain Adolescence problem need and management. Q4 Describe changing trends briefly. Q5 Explain Paralympic and deaflymic.



Regards

Vice Principal