Amrit Public School, Mau

Class- 11(PCB)

Holiday Homework

Roll No.:……………………………….
Name:………………………………..

Class Teacher's Sign   Co-ordinator Sign

Physics

1. A ball is dropped from the height h1 and if rebounces to a height h2 . Find the value of coefficient of restitution?

2. State and prove work energy theorem analytically?

3. An object of mass 0.4kg moving with a velocity of 4m/s collides with another object of mass 0.6kg moving in same direction with a velocity of 2m/s. If the collision is perfectly inelastic, what is the loss of K.E. due to impact?

4. A body of mass 2 kg initially at rest moves under the action of an applied horizontal force of 7 N on a table with coefficient of kinetic friction = 0.1. Compute the following: (a) Work done by the applied force in 10 s, (b) Work done by friction in 10 s, (c) Work done by the net force on the body in 10 s, (d) Change in kinetic energy of the body in 10 s, and interpret your results.

5. A trolley of mass 200 kg moves with a uniform speed of 36 km/h on a frictionless track. A child of mass 20 kg runs on the trolley from one end to the other (10 m away) with a speed of 4 m/s relative to the trolley in a direction opposite to the its motion, and jumps out of the trolley. What is the final speed of the trolley? How much has the trolley moved from the time the child begins to run?

6. A 1 kg block situated on a rough incline is connected to a spring of spring constant 100 Nm^{-1} as shown in Fig. 6.17. The block is released from rest with the spring in the unstretched position. The block moves 10 cm down the incline before coming to rest. Find the coefficient of friction between the block and the incline. Assume that the spring has a negligible mass and the pulley is frictionless.

7. .A ball is dropped on a floor from a height of 2cm. After the collision, it rises up to a height of 1.5m. Assuming that 40% of mechanical energy lost goes to thermal energy into the ball. Calculate the rise in temperature of the ball in the collision. Specific heat capacity of the ball is 800J/k. Take g = 10m/s ^{2}

8. A rain drop of radius 2 mm falls from a height of 500 m above the ground. It falls with decreasing acceleration (due to viscous resistance of the air) until at half its original height, it attains its maximum (terminal) speed, and moves with uniform speed thereafter. What is the work done by the gravitational force on the drop in the first and second half of its journey? What is the work done by the resistive force in the entire journey if its speed on reaching the ground is $10ms^{-1}$?

9. Two identical ball bearings in contact with each other and resting on a frictionless table are hit head-on by another ball bearing of the same mass moving initially with a speed V. If the collision is elastic, which of the following figure is a possible result after collision?

Chemistry

1. Define thermal energy.

2. What are the factors responsible for the strength of hydrogen bonds?

3. 50 cm3 of hydrogen gas enclosed in a vessel maintained under a pressure of 1400 Tor, is allowed to expand to 125 cm3 under constant temperature conditions. What would be its pressure?

4. Mention the two assumptions of kinetic theory of gases that do not hold good.

5. .Why does viscosity of liquids decrease as the temperature is raised?

6. Calculate the pressure exerted by one mole of CO_2 at 273 k if the Vander waal's constant a = 3.592 dm6 at m mol^{-1}. Assume that the volume occupied by CO_2 molecules is negligible

7. Explain how the function pv/RT can be used to show gases behave non-ideally at high pressure.

8. At 250C and 760 mm of Hg pressure a gas occupies 600ml volume. What will be its pressure at a height where temperature is 10 ^0C and volume of the gas is 640 mL. Calculate the volume occupied by 5.0 g of acetylene gas at 500^0C and 740mm pressure.

9. State the law depicting the volume-temperature relationship.

10. At what temperature will the volume of a gas at 0 ^{0}c double itself, pressure remaining constant?

Biology

1. . Differentiate between enderch and exarch conditions.
2. Describe the internal structure of a monocot root with the help of a labeled diagram.
3. What is wood? What are its different types?
4. Why is cambium considered to be lateral meristem?
5. Give any four differences between tracheids and vessels.
6. How are open vascular bundles differ from closed vascular bundles?
7. What are trichomes ? State their functions.
8. Why is cambium considered to be a lateral meristem?
9. Mention four characteristics of sunflower's vascular bundles
10. Differentiate between tracheids & vessels.

हिंदी

- एकल परिवारों में बुजुर्गों की स्थिति विषय पर एक फीचर लिखें|
- नवभारत टाइम्स के संपादक को पत्र लिखकर बताए की लोग अपने वातावरण को स्वच्छ रखने की तरफ बिल्कुल ध्यान नहीं देते|

Physical Education

- How many types of Awards?
- What is Narcotics?
- Explain any 3 Awards?
- What is the Importance of Blood?
- How many types of components? Explain all.

Informatics Practices

Calculation of DA, HRA& PF is based on the type of staff (Teaching and Non-Teaching) according to the following criteria:

Department	D.A.	H.R.A.	PF(Rs.)
Teaching	40% of Basic	10% of Basic	500/-
Non-teaching	30% of Basic	8% of Basic	400/-

Gross Salaryis to be calculated as Basic +DA+HRA+PF
Net Salary is calculated as GrossSalary-PF

S. Write the code to make the text fields for DA,HRA,GrossSalary,PF and Net Salary uneditable.
(ii) When calculate button is clicked, the DA, HRA,GrossSalary,PF and Net Salary should be calculated as per the above given criteria and should be displayed in the respective text fields.
iii) Close the application when Exit button is clicked.

English-XI

1. In order to promote reading habits in the students, your school has organized a Library Week. You have to speak in the morning assembly and inform the students about the week- long programme. You have noted the following points:
   - Day and dates
   - New arrivals displayed
   - Exhibition of books by some publishers
   - Famous authors/poets to visit and interest with students
   - Quizzes and competitions
   - More facilities in the library
   - New teenage magazines

Write your speech in 150-200 words

2. You are Bhoomi Aggarwal, the Head girl of your school. Delhi Administration has launched a campaign against use of polythene bags. Write an article on '*Hazards of polythene Bags*' in about 150-120 words for your school magazine.

3. Krishna, a resdent of Ambedkar, Noida, has been coming across certain headlines in the newspapers on shortages of electricity. She herself is a victim of erratic supply of electricity in her locality. Write a letter to the editor of a local daily regarding the deteriorating condition of electricity in her locality and mentioning the inconvenience faced by the residents of the locality.