SUMMATIVE II WORKSHEET – 2011-12

GRADE IX

PHYSICS

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1 MARK QUESTIONS

1. Nails and pins have pointed tips. Give reasons?
2. State Archimedes' principle.
3. What will happen to the amount of work done if (a) the magnitude of force applied is increased. (b) the displacement of the body is reduced?
4. What is the work done on a body moving in a circular path?
5. Convert kwh into joules.
6. Why are sound waves called mechanical waves?
7. We cannot hear sound from the space. Why?
8. Why can we recognize our family members from their voice without seeing them?
9. What is meant by echocardiography?
10. What is the audible range of human ear?

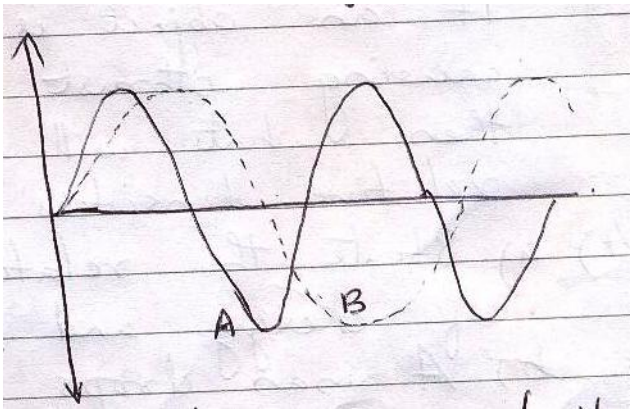
2 MARK QUESTIONS

1. What is meant by reverberation? That are the measures taken to reduce reverberation?
2. Distinguish between longitudinal waves and transverse waves?
3. What happens to the kinetic energy of a body if the mass and velocity of the body are doubled?
4. When is the work done by a force in a body said to be negative? Give two examples.
5. A thrust of 200N exerts a pressure of 10Pa on a body. Calculate the area on which the pressure is exerted?
6. What is meant by echo? What are the conditions for the formation of an echo?

7. 8000 J of work is done by a machine to lift a mass of 100kg vertically upwards. Calculate the height to which the mass is lifted?
8. State the essential conditions needed for work to be done?
9. Derive the formula for gravitational potential energy.
10. Give the sequence of energy changes taking place in the production of electricity from a dam ?

3 MARKS QUESTIONS

1. An object of mass 80g has a volume of 20cm^3. Will the object float on the water? Why? What will be the mass of water displaced by the object?
2. Give reasons:
   a)Balloons filled with hydrogen rise to the ceiling.
   b)Tractors have wide tyres.
   c)A mug full of water appears light as long as it is under water in the bucket than when it is outside water.
3. State with reason whether work done is positive or negative in the following conditions :
   a) Work done by a man in lifting a bucket out of well by means of a pulley.
   b) Work done by losing team in a tug of war.
   c) Work done by an applied force on a body moving over a rough horizontal plane with uniform velocity.
   d) Work done by a man in lifting a bucket out of well by means of a rope tied to a bucket
   e) Work done by gravitational force in above case (d).
   f) Work done by gravity on a freely falling object.
4. What kind of energy transformations taking place in the following :
   (i)Burning of fuels (ii)Photosynthesis (iii)Arrow released from stretched bows.
5. Define: (i) amplitude (ii) frequency (iii) wave length.
6. What is meant by kinetic energy? Derive an expression for kinetic energy?
7. 50 waves pass through a point in 0.1 second. If the distance between one crest and the adjacent through is 0.34m, calculate frequency, wave length and wave velocity.
8. The diagram shows two waveforms A and B.



(i) Which wave will have higher pitch? Give reasons.

(ii) Derive the relationship between wave velocity, frequency and wavelength?

9. How much will a body of weight 35N weigh in water if it displaces 1 litre of water ?($g = 9.8 m/s^2$)

10. (i) Which wave property determines (a) loudness (b) amplitude?

(ii)Represent graphically (a) loud sound and soft sound. (b) high pitch and low pitch sound.

5 MARKS QUESTIONS.

State the law of conservation of energy. Illustrate the law by giving the example of a freely falling object.

1. a)Define power of a body . State and define the S.I unit of power.
   b)Two children A and B both weighing 32kg start climbing up a rope separately and reach a height of 4m. A takes 10s and B takes 15s to reach that level. Calculate the amount of work done by A and B. Which of the two has more power? Show by calculation.
3. a) A body is floating on the surface of a liquid. With the help of a diagram show the two forces acting on it that are responsible for its floatation. State the relationship between these two forces in this case?
   b)What is relative density? If an object is immersed wholly in a liquid causing up thrust equal to the weight of the body then what will be the relation between the relative densities of liquid and the object?
4. a)State the relation between commercial unit of energy and S.I unit of energy.

b)A man drops a 10kg rock from the top of 5m ladder. What is its K.E when it just touches the ground? What is its potential energy when it is at the top of ladder?

5. a)What is meant by ultrasound?
   b)Explain the principle and working of SONAR?

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