GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ

WORKSHEET - 2

SESSION: 2020-21

CLASS: X A, B, C, D, E, F

SUBJECT: PHYSICS

INSTRUCTIONS: Parents are expected to ensure that student spends two days to read and understand the chapter according to the books and websites.

NOTE: 1) Concise Physics I.C.S.E. Class X - By R.P. Goyal and S.P. Tripathi.

2) SRIJAN I.C.S.E. Physics Class X - By S.C. Gupta and Smita Aggarwal.

3) www.extramarks.com and www.topperlearning.com

TOPIC : Work Energy and Power

Q1 How is work related to applied force ?

Q2 What should be the angle between force and displacement to get

  (a) maximum work, and

  (b) minimum work?

Q3 Define joule, the S.I. unit of work and establish a relationship between the S.I. and C.G.S. units of work.

Q4 (a) When does a force do work ?

(b) What is the work done by the moon when it revolves around the earth?

Q5 Define a kilowatt hour. How is it related to Joule?

Q6 Which physical quantity does the electron volt measure? How is it related to the S.I. unit of this quantity?

Q7 By what factor does the kinetic energy of a moving body change when its velocity is reduced to one-third of the initial velocity?

Q8 Name the form of energy which a body may possess when it is not in motion.

 Q9 State the law of conservation of energy.

Q10 What is the main energy transformation that occurs in

  (i) a loudspeaker,

  (ii) an electric cell (primary),

  (iii) photosynthesis in green leaves, and

  (iv) a glowing electric bulb.

Q11 Show that for the free fall of a body, the total mechanical energy at any point in its path is constant.

Q12 State the work-energy theorem.

Q13 Name the physical quantity which is measured in calorie. How is it related to the S.I. unit of that quantity?

Q14 Name the physical quantity measured in terms of horse power. How is horse power related to the S.I. unit of power?

Q15 When an arrow is shot from a bow, it has kinetic energy in it. Explain briefly from where does it get its kinetic energy.

Q16 Calculate the height through which a body of mass 0.5 kg should be lifted if the energy spent for doing so is 1.0 J. (g = 10 m/s^2)

Q17 If the power of a motor is 40 kW, at what speed can it raise a load of 20000 N?

Q18 The work done by the heart is 1 J per beat. Calculate the power of the heart if it beats 72 times in 1minute.

Q19 Rajan exerts a force of 150 N in pulling a cart at a constant speed of 10 m/s, calculate the power exerted.

Q20 A ball of mass 0.20 kg is thrown vertically upwards with an initial velocity of 20 m/s. Calculate the maximum potential energy, it gains as it goes up.

<p align="center">The End</p>