3rd Term – Revision Exercises

1. Classify the following reactions according to the speed of those chemical reactions.

Rusting of iron   Burning firewood

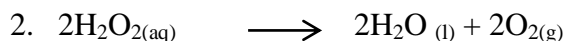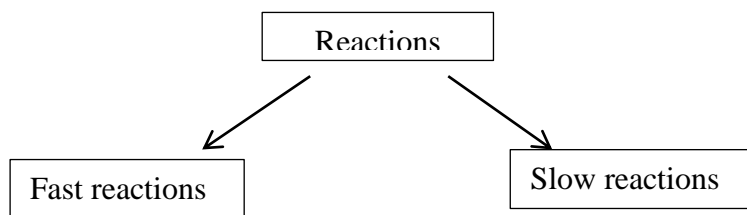Ripening of fruits   Reaction of zinc with a dilute acid

Digestion of food   Reaction of Sodium metal with dilute acid

Manufacturing yoghurt from milk   Ignition of petrol vapour

Blast of a cracker

Reactions

Fast reactions   Slow reactions

2. $2H_2O_{2(aq)} \longrightarrow 2H_2O_{(l)} + 2O_{2(g)}$

    (i)   Separate the reactants and the products of the above reaction.

    (ii)   What is the rate of reaction?

    (iii)   How to determine the rate of a reaction?

3. What are the factors affecting the rate of reaction?

4. (i) What is work?

   (ii) Express it in an equation.

   (iii)What is the international standard unit for measuring Work?

(iv) Perform the calculations separately using the task-related equation and fill in the table below.

Force	Displacement of force	Work done
20N	2m	………………………….
10N	………………….	40J
……………………	1.5m	45J
……………………..	3m	45J
80N	2.5m	…………………………

5. (i) What is energy?
   (ii) Express it in an equation.
   (iii) What is the international standard unit for measuring energy?

6. What are the two types of mechanical energy?

7. (i) What is the kinetic energy?
   (ii) What is the equation for kinetic energy?
   (iii) What is the international standard unit of kinetic energy?

8. Perform the following calculations related to kinetic energy.

   (i)   What is the kinetic energy of a ball with a mass of 500g moving at a velocity of 4 ms^{-1}?
   (ii)   The kinetic energy of a dog of mass 5 kg is 10J when it is running, what is dog's velocity?
   (iii)   When an object was moving at a velocity of 5ms^{-1}, the kinetic energy of that object was 50J. Find the mass of the object.

9. (i) What is the potential energy?
   (ii) What is the equation used to find the potential energy?
   (iii) What is the international standard unit for measuring potential energy?
   (iv) What are the instances used of potential energy in daily life?

10. Perform the following calculations related to potential energy. (g= 10 ms^{-2})
   (i)   If a child lifts a block of wood with 8kg to a 2m height, find the potential energy gained by the wooden block.
   (ii)   If a man of 50kg mass climbs a 100m high mountain, how much energy does that man have now?

11. (i) What is power?
    (ii) What is the equation for power?
    (iii) What is the international standard unit of power?

12. If an object with a mass of 500g moves upwards with a velocity of 20ms^{-1},
    (i)   What is the kinetic energy of the object?
    (ii)   If the object was moving at that velocity for 10 seconds, what would be the power of the object?
    (iii)   What is the maximum height at which the object rises?
    (iv)   What is the potential energy of the object once it rises?