Western Province

Third Term Evaluation - Science – Grade 11

Marking Scheme

Part – I

01 – 4	11- 2	21 – 3	31-3
02-1	12-4	22-3	32-2
03-4	13-3	23-1	33-2
04-1	14-1	24-2	34-1
05-1	15-3	25-3	35-2
06-3	16-3	26-3	36-4
07-4	17-3	27-1	37-1
08-4	18-2	28-2	38-2
09-1	19-2	29-1	39-4
10-2	20-1	30-2	40-1

40 x 2 = 80 marks

Part II

01. A (i) Combusion of fossil fuel (1)

(ii) During 1984-1994 = 358-346 = 12ppm

During 2004-2014 = 400 – 373 = 27 ppm

27 – 12 = 15 ppm (1)

(iii) Green House effect (1)

(iv) a) Wind / Tidal Energy / Sea Waves / Solar energy or use of any type of renewable energy sources

(1)

b) Use of organic fertilizers / Multi Crop cultivation – Bio Control of pets.

(1)

B i. Hg, As or any other suitable answer (1)

ii. Kidney (1)

iii. (a) 4R (1)

(b) Recycling (1)

C i. Bio – community (1)

ii. Dissolve oxygen in water is taken by fish for respiration or any suitable answer

(1)

iii. X – tadpole Y – Water snake (2)

iv. 200 J (1)

v. Bio – mass pyramid (1)

(Total 15 marks)

02. A i. Protein (1)

ii. Tripsain (1)

iii. (s) – Ribosome

(T) – Liver (2)

iv. (a) Ultra filtration (1)

(b) Plasma protein (1)

B i. a) – R b) – Q c) P (3)

ii. S (1)

C i. U

ii. Coconut shell / jute fibers etc (1)

iii. Storing food, Photosynthesis (2)

iv. Lignin is deposited on walls of T but not in V (1)

03. A (i) 2, 8, 7 (1)

(ii) group vi (1)

(iii) Q (1)

(iv) Polar (1)

B (i) Covering / closing the solute after pouring it into solute chamber (1)

(ii) (a) P and r

(b) to investigate whether the poisonous substances are mixed in water / to find out the purity of medicine (1)

C (i) Thistle funnel (1)

(ii) Evolving gas bubbles / heating the vessel (1)

(iii) H_LO (1)

(iv) a) n = m/m = 2.2g / 44gmol^{-1} = 0.05mol (2)

(b) 6.022×10^{23} mol^{-1} x 0.05 mol = 3.011×10^{22} (2)

(Total 15)

04. A (i) X – Variable resistor

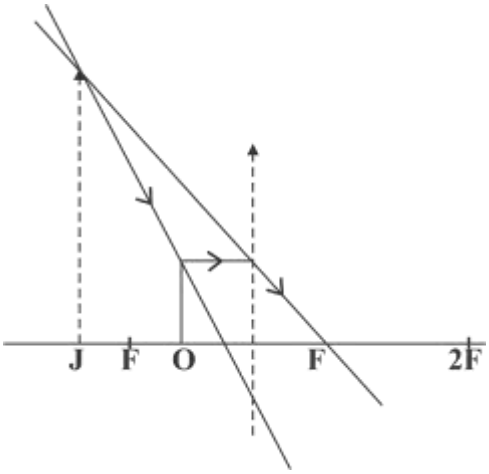
Y – LDR (1/2 x 2 = 1)

(ii) Glowing LED (1)

(iii) Voltage of B – E is increased. Therefore the current flow through the emitter. So the LED lights (1)

B. i. Convex lenses (1)

ii.



iii. a) 46^0 (1)

b) aNw = $\frac{Sin\ 46^0}{Sin\ 32^0}$

C (i) To correct graph (2)

(ii) Linear distance traveled = $\frac{1}{2}$ x 10 x 30 = 150 m (2)

(iii) Uniform acceleration (1)

(iv) $15ms^{-1}$

(v) P = mV = 30 000 kg x $15ms^{-1}$ = 600 000 $kgms^{-1}$

05. A (i) Posplerous (P) (1)

(ii) Bio molecule - Protein

Basic unit - Amino Acid

(iii) Plant body - Strach (1/2 x 2 = 01)

Animal body - Glycogen (1/2 x 2 = 01)

(iv) Sudan III Observation – Red colour oil globules can be seen (2)

(v) 1/2 x 6 = 03)

Vitamin / Mineral	**Deficiency disease**	**Example for an abundant food type**
Calcium	(1) Decaying of teeth & bones	(2) Small fish / cows milk
(3) Vitamin C	Scurvy	(4) Sour fruits
Iodine	(5) goiters	(6) Salt with iodine / small fish

B (i) Pair of sex chromosome (1)

(ii) (a) Meiosis (1)

(b) To correct Diagram

(2)

(iii) Sex linked hereditary diseases (1)

(iv) Blood is not clotted when a wound occurs (1)

C (i) Systems (1)

(ii) Muscle tissue, blood tissue (2)

(iii) in ponds – chlamydomonas

in rotten straw water – paramecium (2)

(iv) increase the volume and the size of the cell (1)

6. A (i) Rises the level of mercury / increase the value (1)

(ii) Exothermic (1)

(iii) $Q = mc\partial$

$4500 = \frac{100}{1000} \times 4200 \times \partial$

$\partial = \frac{4500}{420} \times 10.7^0 \times \partial$ (1)

Final temperature of the mixture = 30 + 10.7 = 40.7 (1)

B (i) Cu^+ / H^+ (1)

(ii) 40H $2H_2O + O_2 + 4e$ (1)

(iii) Red – brown colour appears (1)

(iv) Blue colour changes into colourless or decrease the colour of blue (1)

(v) By connecting the iron nail to the cathode and copper stripe to the anode

C (i) Cl, Ag, Pt, Au for any two (1)

(ii) Sn, Pb (1)

(iii) (a) – P (1)

(b) – $CuSo_4 + Mg \quad MgSo_4 + Cu$ (2)

(c) – Sifting / roasting in air (1)

(iv) to get Co for oxidation (1)

(Total 20)

07. A (i) Work done = Force x distance traveled

= 40 x 10 x 4 = 1600 J

(ii) Ep = mgh = 40 x 10 x 2 = 800 J

(iii) $mgh = \frac{1}{2} mv^2$

$800 = \frac{1}{2} \times 40 \times v^2$

$v^2 = 800 \times \frac{2}{40}$

$v = \sqrt{40}$ 6.32 ms^{-1} (2)

(iv) by smoothing the surface (1)

B (i) PQ – brushes (1)

(ii) From Q, to P (1)

(iii) Fleming's left hand rule (1)

(iv) by changing the terminals of the battery / by changing the magnetic poles (1)

C (i) Electro magnetic induction (1)

(ii) np / ns = Vp | Vs

ns = np x Vs / Vp

$ns = 1000 \times \frac{12}{240}$

ns = 50

No of turns in the secondary coil is 50. (2)

(iii) Mobile chargers, power packs etc (1)

D (i) P = atmospheric Pressure + pressure of H liquid column

$P = \tau h + h\rho g$

(ii) $P = 1 \times 10^5 + \frac{20}{100} \times 1000 \times 10$

P = 102000 Pa (2)

(iii) Decrease the level of water with the time. (1)

(iv) By inclining the goblet (decanter) towards the tab

(v) hydraulic jak (1)

(Total 20)

8. A (i) A (1)

(ii) Self pollination (1)

(iii) Colaurful / large / different shapes (1)

(iv) Diffusion of substances between mother and the foetus (1)

v. in 4 months (1)

v. Herpes (1)

C (i) $W = mg = 50 \times 10 = 500$ N

(ii) Clockwise moment = $2 \times 500 = 1000$ Nm

(iii) $1.25 \times T = 1000$ Nm

$T = 1000 / 1.25 = 800$ N (2)

D (i) The three forces must be co-planer

(ii) All three forces must be in the same plane

All three forces are acting on the same paint

(iii) A child sitting on a swing / balanced pan balance

or for a suitable answer (1)

09. A (i) Powder - 4 minutes

Crystals - 8 minutes (2)

(ii) Rate of reactivity is increased

When taken $CaCo_3$ powder (1)

(iii) Rate of reaction = $\frac{\text{mass of reactants used}}{\text{time taken}}$

(1)

(iv) At initial stage = Blue litmus
changes into Re litmus
At final stage – No change occurs

B (i) Alkene (1)

(ii) C_2H_4 – Carbon double bond between 2 carbons (1)

(iii) (a) To correct diagram (1)

(b) to make non – stick utensils to make snow shoes (1)

(iv) Environmental hazard occurs as they are not decaying
or any other suitable answer (1)

C (i) By changing terminals of electric cells (1)

(ii) There should be a voltage (potential difference)
to flow current through a circuit.

(iii) To control the current flowing through the circuit (1)

(iv)

(v) V = IR
R = V/I = 3/0.25 = 12 Ω (2)

D (i) A vacuum is placed between
two glass layers in the flask
Inner wall is silver in colour
Thick plastic lid (1)

(ii) To keep ice without melting them (1)

(iii) For a suitable explanation as latent heat of steam (2)

(Total 20 marks)