බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
மேல் மாகாணக் கல்வித் திணைக்களம்
Department of Education - Western Province

වර්ෂ අවසාන ඇගයීම
ஆண்டிறுதி மதிப்பீடு - 2020
Year End Evaluation

පිළිතුරු පත්‍රය
Marking Scheme

ශ්‍රේණිය / தரம் / Grade	11	විෂයය / பாடம் / Subject	**Science**	පත්‍රය / வினாத்தாள் / **Paper**	**I,II**

I - Paper - Answer

(1)	3	(11)	4	(21)	3	(31)	3
(2)	2	(12)	1	(22)	4	(32)	2
(3)	1	(13)	3	(23)	4	(33)	4
(4)	2	(14)	4	(24)	3	(34)	3
(5)	3	(15)	4	(25)	4	(35)	2
(6)	2	(16)	2	(26)	3	(36)	1
(7)	2	(17)	4	(27)	4	(37)	3
(8)	4	(18)	1	(28)	1	(38)	3
(9)	2	(19)	2	(29)	2	(39)	1
(10)	1	(20)	3	(30)	4	(40)	2

II Paper - Answer Part - A

(01) (A) (i) Global warming (Mark 01)

(ii) 50 ppm (Mark 01)

(iii) (a) NO / NO_2 (Mark 01)

(b) August (Mark 01)

(iv) reduce burning of fossil fuel / closure of industries/ less traffic (Mark 01)

(B) (i) y (Mark 01)

(ii) x (Mark 01)

(iii) minimum cost / more sustainable (Mark 01)

(iv) use of organic fertilizer/bio control methods/use of natural pesticides (Mark 01)

(v) 1J (Mark 01)

(C) (i) A group of organisms belong to the same species in a particular geographical location during a specific time period is called a population (Mark 01)

(ii) S - community
T - Eco system (Mark 1×2=2)

(iii) (a) NO_3 / NO_2 (Mark 01)

(b) destroy soil organisms due to usage of agro chemicals/chemical fertilizers/removing harvest etc. (Mark 01)

(Total Mark 15)

(02) (A) (i) bile (Mark 01)

(ii) Pancreas (Mark 01)

(iii) glycerol (Mark 01)

(iv) lacteals (Mark 01)

(v) (a) gastritis (Mark 01)

(b) Having food in time / less consumption of oily & spicy food (Mark 01)

(B) (i) X - self pollination Y - cross pollination (Mark 02)

(ii) Y (Mark 01)

(iii) meosis (Mark 01)

(C) (i) reflex arch (Mark 01)

(ii) P - inter neurone

Q - motor neurone (Mark 02)

(iii) increase the speed of transmission of impulses (Mark 01)

(iv) skeletal muscle tissue (Mark 01)

(Total Mark 15)

(03) (A) (i) 1. to measure the amount of given liquid correctly

2. to measure the mass (Mark 02)

(ii) relative molecular mass of sucrose is 342

mass of sucrose in 100cm3 of 1 moldm^{-3}

$= \frac{1}{1000} \times 106$ mol

$= 0.1$mol (Mark 02)

mass of sucrose $= 340$ g mol$^{-1} \times 0.1$mol

$= 34.2$ g (Mark 01)

(iii) by heating sucrose solution (Mark 01)

(iv) (a) sugar cane stems

(b) crystalization (Mark 02)

(B) (i) ionic bonds (Mark 01)

(ii) NaCl (Mark 01)

(iii) by washing the vessel with distilled water completely (Mark 01)

(C) (i) molar mass of urea $= (12 + 16) + (14 \times 2 = 2 \times 2)$

$= 28 + 28 + 4$

$= 60$ gmol^{-1} (Mark 02)

(ii) No. of moles in urea $= \frac{30\text{g}}{60\ \text{gmol}^{-1}}$

$= 0.5$ mol (Mark 02)

(iii) decreases (Mark 01)

(Total Mark 15)

(04) (A) (i) $w \times \frac{75}{100}m = 15N \times \frac{50}{100}$ m

$w = \frac{750}{75}$ N

$w = 10N$

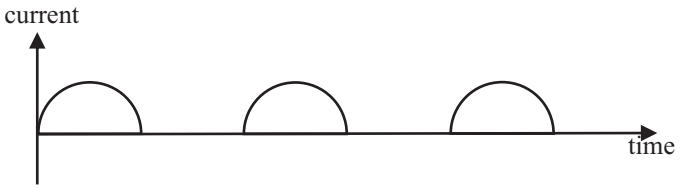
$m = 1kg$ (Mark 02)

(ii) longitudinal waves / sound waves (Mark 01)

(B) (i) Rectifine diode
(Mark 01)

(ii) half wave rectification (Mark 01)

(iii)



(Mark 02)

(C) (i) P - upthrust
P - weight of the object (Mark 02)

(ii) P = 7.5 N - 5 N
+ 2.5 N (Mark 02)

(iii) P and Q have equal forces (Mark 01)

(D) (i) F = 20000 N - 15000
= 5000 N (Mark 01)

(ii) F = ma
5000N = 1000kg x a
a = $5ms^{-2}$ (Mark 01)

(iii) having grooves (Mark 01)

(Total Mark 15)

(05) (A) (i) paramecium (Mark 01)

(ii) kingdom bacteria (Mark 01)

(iii) prokaryotic / no organized nucleus (Mark 01)

(iv) (a) chitin (Mark 01)

(b) to manufacture antibiotics / to produce bread & alcohol (Mark 01)

(B) (i) to remove dust particles from inhale air
to moisturize inhale air.
to warm up inhaled air to get the body temperature (Mark 01)

(ii) (a) moves forward
(b) reduce the curvature (Mark 02)

(iii) (a) CO_2 (Mark 01)

(b) red blood cells, hemoglobin (Mark 02)

(iv) lactic acid collected in muscles
during anerobic respiration (Mark 02)

(C) (i) lining up of free surfaces & protection / absorptive function / perception of stimuli / secretory function (Mark 01)

(ii) P - nervouse tissue
Q - connective tissue (Mark 02)

(iii) cardiac muscle cells (Mark 01)

(iv) X - parenchyma tissue
Y - collenchyma tissue (Mark 02)

(v) cross section of young pumpkin stem./"monara kudumbiaya" (Mark 01)

(Total Mark 20)

(06) (A) (i) The formation of a unipositive gaseous ion by removing an election from an atom in the gaseous state (Mark 02)

(ii) 2, 8 (Mark 01)

(iii) a) 2^{nd} period
b) V group (Mark 02)

(iv) G (Mark 01)

(v) graphite (Mark 01)

(vi) in paraffin wax (Mark 01)

(B) (i) $KMnO_4$ / potassium permanganate (Mark 01)

(ii) decomposition reaction (Mark 01)

(iii) downward displacement of water (Mark 01)

(iv) for respiration / to produce oxy - acetelene flame / for the divers & astronauts / as a combustible gas (Mark 02)

(v) no of molecules in 32g of O_2 = 6.022×10^{23}

no of molecules in 64g of of O_2= $\frac{6.022 \times 10^{23} \times 48}{32} = 1.5 \times 6.022 \times 10^{23}$ (Mark 02)

(C) (i) B (Mark 01)

(ii) red (Mark 01)

(iii) H^+ Cl^-, OH^- (Mark 01)

(iv) PH = 7 (Mark 01)

(v) neutralization reaction (Mark01)

(Total Mark 20)

(07) (A) (i) zero

(ii) linear
act in opposite direction (Mark 02)

(B) (i) 230V (Mark 01)

(ii) A - overload circuit breaker (service fuse)
B - electric meter (Mark 02)

(iii) for distribution of current through light and socket circuit. (Mark 01)

(iv) no of units = $40 \times \frac{30}{60}$ x 30 wh

= $\frac{600}{1000}$ kwh

no of units = 0.6 kwh (Mark 02)

(C) (i) A & B LED bulbs are lighted one after the other
(Mark 01)

(ii) alternative current (Mark 01)

(iii) use of strong magnet / increase number of turns in copper wire (Mark 01)

(D) (i) X (Mark 01)

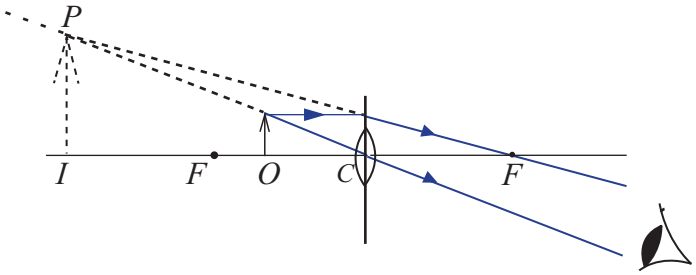
(ii) conduction (Mark 01)

(iii) radiation (Mark 01)

(iv) electric iron (Mark 01)

(v) heat energy increases as a result of latent heat (Mark 01)

(E) (i)



(ii) simple microscope (Mark 01)

(Total Mark 20)

(08) (A) (i) Lipid, Protein (Mark 01)

(ii) $CuSO_4$ (Mark 01)

(iii) vitamin A (Mark01)

(iv) (a) inter molecular attractive forces (Mark 01)

(b) • Oxygen is dissolved in water

• Aquatic organisms like fish gets oxygen from dissolved oxygen in water

(Mark 01)

(B) (i) ADH (Mark 01)

(ii) calcium oxalate (Mark 01)

(iii) • not drinking enough water

• postponing of urination (Mark 02)

(C) (i) velocity of sound is different from velocity of light in air

(ii) velocity $= \frac{\text{distance}}{\text{time}}$

$= 330 ms^{-1} \times 4s$

$= 1320m//$

(D) (i) In part AQ (Mark 01)

(ii) At Q (Mark 01)

(iii) (Ep) $mgh = 1/2\ mv^2$ (Ek)

$100\ J = \frac{1}{2} \times \frac{500}{1000} \times V^2$

$V^2 = 400$

$V = 20 ms^{-1}//$ (Mark 02)

(iv) • decrease the speed

• frictional force acts opposite to the direction of motion (Mark 02)

(Total Mark 20)

(09) (A) (i) water (Mark 01)

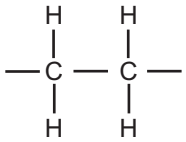
(ii) to absorb water vapours in tube B (Mark 01)

(iii) a) corroded

b) not corroded (Mark 02)

(iv) hydrocarbon (Mark 01)

(B) (i)



(ii) electric insulators / water proof / air proof / light / can stand with tensions (Mark 01)

(iii) cellulose/DNA/Protein/Rubber/Starch (Mark 01)

(iv) environment pollution as they do not decay or relevant answer (Mark 01) (Mark 02)

(C) (i) during (0 - 150) s (Mark 01)

(ii) momentum = 500kg x 25ms^{-1} $\frac{25 \times 2}{2}$

= 12500 kgms^{-1}// (Mark 02)

(iii) distance traveled in deceleration =

= 25m

The vehicle traveled 25m within 2 seconds. But the tortoise is 30m away. so no accidents takes place (Mark 02)

(D) (i) by measuring current in the circuit (Mark 01)

(ii) copper (Mark 01)

(iii) resistivity is less in copper than nichrome (Mark 01)

(iv) $V = IR$

$3 = 1 \times 5$

$\frac{3}{15} = I$

$\frac{1}{5} = 0.2^{A} = I$ (Mark 02)

(Total Mark 20)