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	10	විෂයය / பாடம் / Subject	**Science**	පත්‍රය / வினாத்தாள் / **Paper**	**I,II**

I - Paper - Answer

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

II Paper - Answer Part - A

(01) (A) (i) Electron microscope (Mark 01)

(ii) cold, MERS, SARS (Mark 01)

(iii) respiratory system (Mark 01)

(iv) no organized nucleus / shows reproductio when it enters to a living host cell (Mark 01)

(B) (i) A, F / Amoeba, Paramecium (Mark 01)

(ii) D / mosquito (Mark 01)

(iii) Plantae (Mark 01)

(C) (i) (a) moment of force

(b) clockwise

(c) magnitude of the force and perpendicular distance to the line of action

(d) to increase anticlockwise moment of force by hanging a weight at Q or for the idea given. (Mark 01)

(D) (i) Joining of atoms by sharing electrons between a pair of atoms. (Mark 01)

(ii) • high boiling point

• high specific heat capacity

• having a higher density than that of ice

(iii)

(Mark 02)

(Total Mark 15)

(02) (i) Respiration (Mark 01)

(ii) Mitochondirum (Mark 01)

(iii) Potassium hydroxide (Mark 01)

(iv) Oxygen (Mark 01)

(v) to remove CO_2 from the atmosphere (Mark 02)

(vi) set up B (Mark 01)

(vii) Lime water (Mark 01)

(viii) Let the air passes through A to E (Mark 01)

(ix) Y solution in B - doesn't change the colour of lime water (Mark 02)

Y solution in B - changes the colour of lime water (Mark 02)

(x) germinating mung seeds (Mark 01)

(xi) no change of colour (Mark 01)

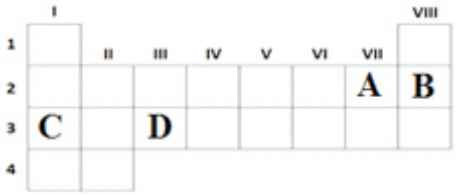
(Total Mark 15)

(03) (i)

Element	Atomic No	No. of protons	Electronic Configurations
A	9	9	2,7
B	10	10	2,8
C	11	11	2,8,1
D	13	13	2,8,3

(Mark 04)

(ii) Give marks if below given elements are placed correctly in the periodic table

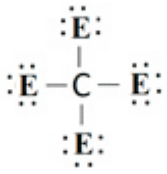


(Mark 04)

(iii) $D_2 O_3$ (Mark 01)

(iv) ionic bonds (Mark 01)

(v) a.

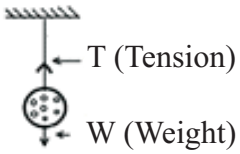


(Mark 02)

b. Covalent bonsds (Mark 01)

c. NaE (Mark 01)

(04) (A) (i)

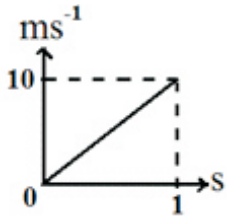


(Mark 02)

(ii) The two forces must have equal magnitudes. The two forces must act along two opposite direction (Mark 01)

(iii) W = mg
W = 200/1000 x 10
W = 2N (Mark 01)

(iv) (a)



(Mark 02)

$$\text{acceleration} = \frac{\text{change of velocity}}{\text{time}}$$

(b) $10ms^{-2} = V - 0/1\ s$
$V = 10ms^{-1}$ (Mark 01)

(c) $= \frac{1}{2} \times 1s \times 10ms^{-1} = 5m$ (Mark 01)

(v) Ep = mgh
= 0.2 kg x 10ms-2 x 5kg
= 10J (Mark 02)

(B) (i) the product of the mass of the object and its velocity
(momentum P = m x v) (Mark 01)

(ii) momentum P = m x v
$= \frac{50}{100}$ kg x $30ms^{-1}$
$= 1.5\ kgms^{-1}$ (Mark 02)

(iii) for every action, there is an equal and opposite reaction (Mark 01)

Part - B

(05) (A) (i) mitochondria (Mark 01)
(ii) photosynthesis (Mark 01)
(iii) P (Mark 01)
(iv) Oxygen gas (Mark 01)
(v) when insert a lighted splinter it burns brightly (Mark 01)

(B) (i) skin with hair/external ears/present mammary glands and sweat glands (Mark 02)
(ii) four chambered heart/ cold blooded animals (poikilothermic) (Mark 02)
(iii) possess alight bony endoskeleton/streamlined body (Mark 02)

(C) (i) The process of generating new generation from another one (Mark 01)
(ii) Production of daughter plants which are identical to mother plant/ability to propagate soon (Mark 02)
(iii) tuber - potatoes rhizome - ginger/turmeric
come - colocasia bulb - onions/leeks
(iv) can spent dormant period in adverse climatic conditions/ storage of food (Mark 01)

(Total Mark 20)

(06) (A) (i) A = NaCl ionic lattice / B
Graphite / C
Diamond (Mark 03)

(ii) Na^+ - 2, 8 (Mark 01)

(iii) as coal, graphite, fibers, charcoal etc.
(Mark 01)

(iv) 6 (Mark 01)

(v) Na_2O/Kcl/any ionic compound (Mark 02)

(vi) • Electricity conducts through aquosus or fused solutions.
• A solid in room temperature
• consist of positive and negative ions
• high melting and boiling points (Mark 02)

(vii) B, C (Mark 01)

(B) (i) iron (Fe)/Tin (Sn)/zink (zn) (Mark 01)

(ii) hematite - Fe_2O_3. (Mark 02)

(iii) (a) Hematite/ Carbonate/Coke (Mark 02)

(b) Coke (Mark 01)

(c) 650C heated air (Mark 01)

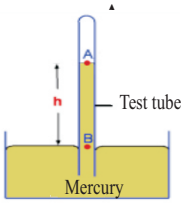
(d) R- slag S - liquid iron (Mark 02)

(Total Mark 20)

(07) (A) (i) Force exerted on a unit area $= Nm^{-2}$ (Mark 01)

(ii) Pressure $= \frac{Force}{m^2} = \frac{N}{m^2}$

(iii)



A glass tune, about 1m long with one end closed, turned upside down while making sure that no air enters the tube (Mark 03)

(iv) P = hdg

$= \frac{72}{100}$ m x 13600kgm^{-3} x 10ms^{-2}

= 97920 pa (Mark 03)

(v) drinking with the use of straw/removing the water ina tand using th siphaon action of the rubber sucker. (Mark 01)

(B) (i) $\frac{1}{R} \equiv \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$

$\frac{1}{R} = \frac{1}{30} + \frac{1}{20} + \frac{1}{6}$

$\frac{1}{R} = \frac{2+3+10}{60} = \frac{15}{60}$

$R = 4\ \Omega$ (Mark 02)

(ii) (a) 1m long resistance r_4 = 2.5Ω

∴ 2m long long resistance r_4 = 2.5Ω x 2 = 5Ω (Mark 01)

(b) r_5 = 20Ω – 5Ω = 15Ω (Mark 02)

(iii) $R = R_1 + R_2 = 20\Omega + 4\Omega = 24\Omega$ (Mark 02)

(iv) V = IR

6V = I x 24Ω

$I = \frac{6}{24}$

$= \frac{1}{4}$ A//

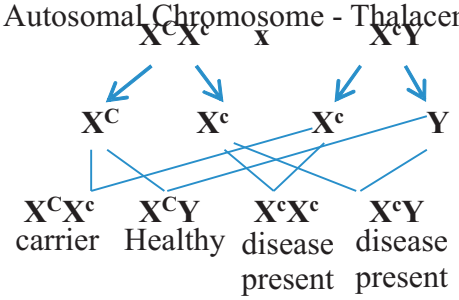
= 0.25A (Mark 03)

(Total Mark 20)

(08) (A) (i) The genes that present in the same chromosome which are not segregated independently. (Mark 02)

(ii) Sex linked genes - Hemophilia (Mark 02)
Autosomal Chromosome - Thalacemia

(iii)



(Mark 02)

(B) (i) (a) Potential Energy (Mark 01)

(b) in hydro power generation/when using forging hammer. (Mark 02)

(c) E_p = mgh

= 3 kg x x10ms^{-2} x 12m

= 360J ⟶ (Mark 03)

(ii) (a) Potential energy of water ⟶ kinetic energy of water (Mark 01)

(b) E_k = ½ mv^2

= ½ x 6 kg x 40ms^{-1} x 40ms^{-1}

= 800J (Mark 03)

(c) to increase the water flow / Allowing high amount of water to contact with a turbine of higher surface are. (Mark 01)

(Total Mark 20)

(09) (A) (i) Horizontal lines - periods
Vertical columns - groups (Mark 02)

(ii) solid (Mark 01)

(iii) • decrease first ionization energy

(iv) Potassium oxide - Base
Sulphur oxide - Acid (Mark 02)

(v) Velency electrons (Mark 01)

(vi) Boron (B) / Silicon (Si) (Mark 01)

(vii) Sulphur dioxide / SO_2 (Mark 01)

(B) (i) Evert action has a equal and opposite reaction (Mark 01)

(ii) A - Action
B - Reaction (Mark 02)

(iii) motion of a rocket / when a bullet is released. (Mark 01)

(iv) Streamlined shape is useful to protect teh body from resistance of water (Mark 01)

(C) (i) more (Mark 01)

(ii) $F \times \frac{1}{m}$ (Mark 02)

(iii) $F = ma$
$20N = 6kg \times a$
$a = 3.33ms^{-2}$ (Mark 02)

(Total Mark 20)