

TVSSC – COMMON REVISION EXAMINATION – (2019 – 2020)
SCIENCE (086)
MARKING SCHEME

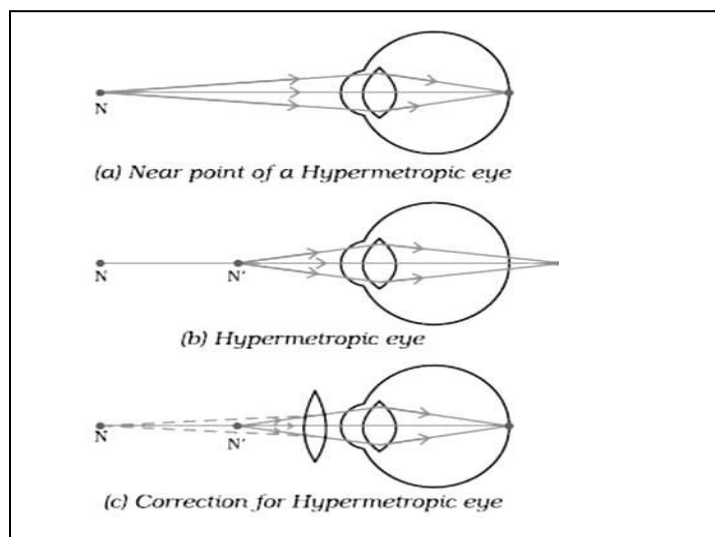
SECTION – A

1	concave mirror, to get the parallel beam of light.	1 mark
2	Volt is the electrical unit of voltage (or) potential difference	1 mark
3	The advantage of solenoid over an ordinary coil is that inside a solenoid a uniform magnetic field is produced	1 mark
4(a)	artificial dialysis	1 mark
4(b)	iii) asthma	1 mark
4(c)	kidney failure	1 mark
4(d)	GFR value of 90mL/min or higher indicates that glomerulus is functioning properly. GFR values less than 90mL/min indicates the kidney damage.	1 mark
5(a)	A belongs to group - 1 and G belongs to group – 17	1 mark
5(b)	H belongs to noble gas element	1 mark
5(c)	A will have largest atomic radius	1 mark
5(d)	D is likely to be a metalloid or semi metal	1 mark
6	c) Cinematography (or) a) Red colour is least scattered	1 mark
7	(b) 0.025 V	1 mark
8	(a) 6.5 – 7.5	1 mark
9	(d) (ii) and (iv) OR (b) neon	1 mark
10	(c) Conc.HCl : Conc.HNO ₃ 3 : 1	1 mark
11	b) Hydro electricity	1 mark
12	(b) 10% OR (a) khadins	1 mark
13	c) If assertion is true but reason is false.	1 mark
14	(d) A is false but R is true.	1 mark

SECTION – B

15	<p>(i) The colour of ferrous sulphate crystals changes from green to white then turn into brown. The smell of burning sulphur is observed.</p> <p>(ii) Thermal decomposition reaction</p> <p>(iii) $2\text{FeSO}_4 \longrightarrow \text{Fe}_2\text{O}_3 + \text{SO}_2 + \text{SO}_3$</p> <p>The products are - Ferric Oxide, sulphur dioxide and sulphur trioxide.</p>	<p>0.5 Mark</p> <p>0.5 Mark</p> <p>0.5 Mark</p> <p>1 Mark</p> <p>0.5 Mark</p>
16	<p>$\text{Al}_2\text{O}_3 + 2\text{NaOH} \longrightarrow 2\text{NaAlO}_2 + \text{H}_2\text{O}$</p> <p>$\text{Al}_2\text{O}_3 + 6\text{HCl} \longrightarrow 2\text{AlCl}_3 + 3\text{H}_2\text{O}$</p> <p>$\text{ZnO} + 2\text{NaOH} \longrightarrow \text{Na}_2\text{ZnO}_2 + \text{H}_2\text{O}$</p> <p>$\text{ZnO} + 2\text{HCl} \longrightarrow \text{ZnCl}_2 + \text{H}_2\text{O}$</p> <p>They are called amphoteric Oxides.</p> <p align="center">OR</p> <p>(i) $\text{Ca} + 2\text{H}_2\text{O} \longrightarrow \text{Ca(OH)}_2 + \text{H}_2$</p> <p>(ii) $2\text{HgS} + 3\text{O}_2 \longrightarrow 2\text{HgO} + 2\text{SO}_2$</p> <p>(iii) $3\text{MnO}_2 + 4\text{Al} \longrightarrow 2\text{Al}_2\text{O}_3 + 3\text{Mn} + \text{Heat}$</p>	<p>0.5 Mark</p> <p>0.5 Mark</p> <p>0.5 Mark</p> <p>0.5 Mark</p> <p>1 Mark</p> <p>1 Mark</p> <p>1 Mark</p>
17	<p>(i) K</p> <p>(ii) Be and Ca, as both have same number of valence electrons (ie.), 2.</p> <p>(iii) $\text{K}^+ + \text{X}^- \longrightarrow \text{KX}$</p> <p>Nature of the compound is ionic.</p>	<p>0.5 Mark</p> <p>1 Mark</p> <p>1 Mark</p> <p>0.5 Mark</p>
18	<p>- It takes place in the small intestine. Fats are present in the intestine in the form of large globules.</p> <p>- Bile salts break them down into smaller globules increasing efficiency of enzyme action.</p> <p>- Pancreatic juice has enzyme lipase which breaks down emulsified fat.</p> <p>- Enzymes secreted by the walls of small intestine finally converts fats into fatty acid and glycerol</p> <p align="center">OR</p> <p>(a) Adrenaline increases the heart beat and breathing rate which results in the supply of more oxygen to muscles. It reduces the blood supply to the digestive system and skin and diverts it to the skeletal muscles. All these responses together enable us to deal with emergency situation.</p> <p>(b) If growth hormone is secreted in excess it leads to gigantism, while if secreted less leads to dwarfism in childhood.</p> <p>(c) Patients suffering from diabetes have high blood sugar level as insulin is not secreted by pancreas which helps to lower blood sugar level.</p>	<p>0.5 mark</p> <p>1 mark</p> <p>1 mark</p> <p>0.5 mark</p> <p>1 mark</p> <p>1 mark</p> <p>1 mark</p>

19	<p>(a) Removal of stamens of a bisexual flower will not affect pollination as its pistil is intact.</p> <p>Formation of fruit will take place as transfer of pollen grains from the anther of another flower to the stigma will take place causing cross pollination.</p> <p>(b) It transfers glucose and oxygen from mother's blood to the foetus. It removes the waste generated by the foetus to the mother's blood.</p>	<p>1 mark</p> <p>1 mark</p> <p>0.5 mark</p> <p>0.5 mark</p>
20	<p>(a) Rr and Rr</p> <p>(b) Red colour flower is dominant and white colour flower is recessive.</p> <p>(c) Monohybrid cross, phenotypic ratio is 3:1</p>	<p>1 mark</p> <p>1 mark</p> <p>1 mark</p>
21	<p>Any food chain that could exist in a grassland ecosystem with plants at the first trophic level.</p> <p>$Sun \xrightarrow{1\%} Plant \xrightarrow{10\%} Deer \xrightarrow{10\%} Lion$</p> <p>30,000J 300J 30J 3J</p>	<p>1 mark</p> <p>2 mark</p>
22	<p>i) In a metal, large number of free electrons are found. These electrons are in constant random motion that means they are moving here and there. Thus, current generated in one direction is cancelled out by current generated in opposite direction by these randomly moving electrons. So, net current in a metal is zero.</p> <p>ii) The resistance of an ideal ammeter is zero.</p> <p style="text-align: center;">OR</p> <p>i) $V = 1.2V$</p> <p>$I = 2\mu A = 2 \times 10^{-6} A$</p> <p>$R = \frac{V}{I} = \frac{1.2 \times 10^6}{2} = \frac{12 \times 10^5}{2} = 6 \times 10^5 \Omega$</p> <p>ii) Parallel</p>	<p>2 Mark</p> <p>1 Mark</p> <p>0.5 mark</p> <p>0.5 mark</p> <p>1 Mark</p> <p>1 Mark</p>
23	<p>Near point is 1 m = 100 cm</p> <p>Here u = -25 cm,</p> <p>v = -100 cm , f = ?</p> <p>$\frac{1}{f} = \frac{1}{v} - \frac{1}{u} = \frac{1}{-100} - \frac{1}{-25} = \frac{3}{100}$; $\frac{1}{f} = \frac{3}{100}$</p> <p>$P = \frac{3}{100} cm^{-1} = \frac{3}{100} \times 100m^{-1} = 3D$</p>	<p>0.5 mark</p> <p>0.5 mark</p> <p>0.5 mark</p> <p>0.5 mark</p>



1 Mark

24

$$P = \frac{E}{t};$$

$$E = P \times t = 2KW \times 3600s = 7200k \times \frac{J}{s} \times s$$

\therefore 18 KJ of heat is liberated on burning 1 g of coal.

\therefore 7200 KJ of heat is liberated by burning = $\frac{7200 \times 1}{18} = 400$ g of coal.

ii) The fresh piece of wood contains moisture. The heat given is used to remove moisture and, therefore it is difficult to burn it.

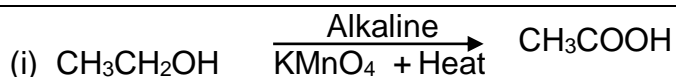
0.5 Mark

0.5 Mark

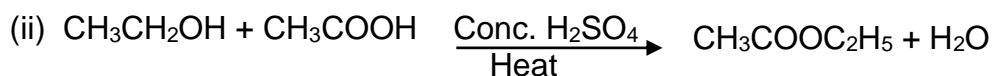
1 Mark

1 Mark

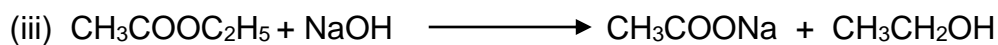
25



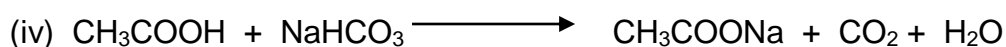
1 Mark



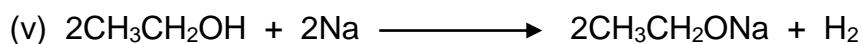
1 Mark



1 Mark

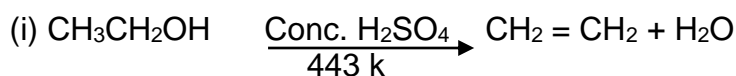


1 Mark



1 Mark

OR



1 Mark

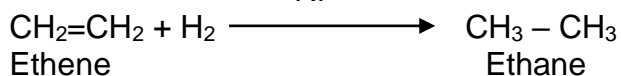
Ethanol

Ethene

Conc. H_2SO_4 acts as dehydrating agent.

1 Mark

Ni

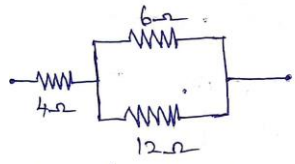


1 Mark

	(ii) It cannot lose four electrons, because high energy is needed to remove four electrons. It cannot gain four electrons, because 6 protons cannot hold 10 electrons.	1 Mark 1 Mark
26	(i) Tap water contains ions which makes it a good conductor whereas distilled water does not contain any ions. (ii) Dry HCl gas does not dissociate into ions, so it has no effect on the litmus. Hydrochloric acid form ions. So it turns blue litmus red. (iii) Baking soda prevents the formation of lactic acid when milk turns sour. (iv) Acid is added to water slowly because the reaction is highly exothermic. If water is added to acid, then glass container may break due to lot of heat evolved. (v) NH_3 dissolves in H_2O forming NH_4OH , therefore it acts as base. $\text{NH}_3 + \text{H}_2\text{O} \longrightarrow \text{NH}_4\text{OH}.$	1 Mark 1 Mark 1 Mark 1 Mark 1 Mark
27	Refer NCERT text book : Pg.268, 269 Each point carries 1 mark	5 mark
28	<p>a) P – Hypothalamus - controls body temperature Q – Pituitary - controls growth R – Medulla - controls involuntary actions like blood pressure, salivation etc. S – Cerebellum - controls precise voluntary actions, balance and posture. T – Cerebrum - sensing, memory storage and conscious behaviour.</p> <p style="text-align: center;">OR</p> <p>i) produce sperm male sex hormone testosterone. ii) secrete fluid that provide nutrition to the sperms. iii) sperms are carried through vas deferens which write with a tube coming from urinary bladder. iv) tube that carries urine from kidney to the urinary bladder. v) add secretions so that sperms are in a fluid that facilitates their transport and also provide nutrition.</p>	5 mark (1 mark each) 5 mark (1 mark each)

ii)

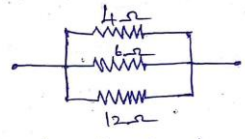
a)



$$\frac{1}{R_p} = \frac{1}{R_2} + \frac{1}{R_3} = \frac{1}{6} + \frac{1}{12}$$
$$= \frac{2+1}{12} = \frac{3}{12} = \frac{1}{4}$$

$R_p = R_1 + R_2 = 4 + 4 = 8 \Omega$

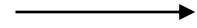
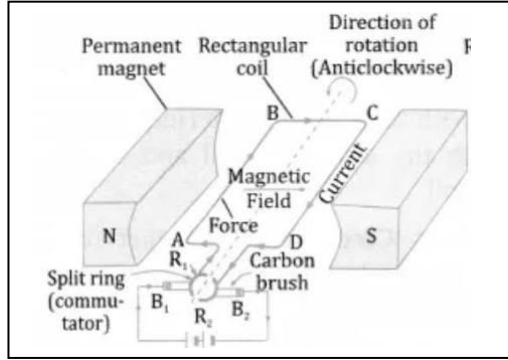
b)



$$\frac{1}{R_p} = \frac{1}{4} + \frac{1}{6} + \frac{1}{12}$$
$$= \frac{3+2+1}{12} = \frac{6}{12}$$
$$\frac{1}{R_p} = \frac{1}{2} ; R_p = 2 \Omega$$

2 mark
(1 mark each for (a) & (b))

OR



2 mark

Principle → Fleming's left hand rule (or) Electrical energy to mechanical energy

1 mark

Working and Functional explanation

Split ring – A device that reverses the direction of flow of current.

2 mark