

KENDRIYA VIDYALAYA NDA PUNE

HALF YEARLY EXAM [2017-2018]

CLASS – 10th

SUB – SCIENCE

MM-80

Answer key

s. no.	Answer of the questions	Marks
1.	pH – (potenz of hydrogen) the negative logarithm of hydrogen ion concentration of a solution is known as its pH.	1
2.	Amoeba – divides in any plan by binary fission. Leishmania – divides along the orientation of the whip like structure called flagellum.	1
3.	During heavy exercise in addition to aerobic respiration anaerobic respiration also takes place. This causes accumulation of lactic acid in muscles, which causes cramps. By massaging with oil or applying hot water blood circulation increases causing complete breakdown of lactic acid and relief in pain.	2
4.	a. By parallel combination formula – Resultant resistance is = 1.11 ohm b. By ohms law – $V=IR$ $I=V/R= 12/1.11= 10.81 A$	2
5.	a. Growth hormone. b. Adrenaline. c. Progesterone. d. Insulin.	½ X 4
6.	a. Villi – in small intestine. To increase surface area for efficient absorption of nutrients. b. Gastric gland – present in stomach, it releases HCl, mucus, pepsin rennin enzymes. c. Salivary gland in oral cavity – secretes salivary amylase.	1+1+1
7.	Applying mirror formula – Image distance = 1.15 m. By magnification – Image size is = 0.23. Nature – virtual, erect and small image.	3
8.	a. bee sting inserts acids, which cause irritation. It is relieved by rubbing moist baking soda leading to neutralisation.	1+1+1

	<p>b. Dilution of acids is highly exothermic reaction. So acids should be added drop by drop to water for dilution. If we add water to acid it will give lot of heat which may cause splashing of acid out on our body. Even the beaker may blast.</p> <p>c. Baking soda.</p>	
9.	<p>a. Because of atmospheric refraction sun appears to reddish. As in morning light has to travel longer path length through atmosphere resulting in more refraction and red colour.</p> <p>b. power of eye lens to adjust its focal length between infinity and near point, so as to form clear and distinct image of the object placed between infinity and near point.</p>	2+1
10.	<p>Diagram of nerve cell. Neurotransmitter.</p>	2+1
11.	<p>3 Differences between endocrine and exocrine glands.</p>	3
12.	<p>a. gold, silver & platinum are lustrous and less reactive, so used as jewellery.</p> <p>b. Sodium and potassium being highly reactive reacts with oxygen violently. To prevent it these are stored in kerosene oil.</p> <p>c. Aluminium forms stable aluminium oxide layer (Al_2O_3) which prevents further oxidation.</p>	1+1+1
13.	<p>A. amphoteric oxides – the metal oxides which behave both as acid and base are known as amphoteric oxides. Example – zinc oxide, aluminium oxide.</p> <p>B. Nitric acid being strong oxidising agent will oxidise hydrogen gas to water. So no hydrogen gas is released. But very dilute nitric acid can give hydrogen gas with manganese and magnesium.</p>	1+2
14.	<p>A – is uterus – the muscular bag like structure formed by fusion of two fallopian tubes. Functions – to provide site for development of embryo & protect it.</p> <p>B – is ovary – the female reproductive part which gives ovum & oestrogen hormone.</p>	1 ½ + 1 ½
15.	<p>a. Placenta – is umbilical cord like structure formed by maternal & embryonic tissue. Functions –</p> <ol style="list-style-type: none"> i. It connects the embryo with uterine wall. ii. Helps transportation of nutrition & Oxygen from mother to embryo. iii. Helps removal of waste and carbon dioxide from embryo. 	3
16.	<p>a. In desert plants stomata open at night and absorb carbon dioxide which is converted to an intermediate. Then during day</p>	2+3

	<p>time sunlight is absorbed and the intermediate is converted in carbohydrate.</p> <p>b. Heart – is a pump like structure which helps in circulation of blood whole life through our body..</p> <p>structure – it has four chambers. Upper two atria & lower two ventricles. Ventricles are separated by septum.</p> <p>Diagram.</p>	
17.	<p>a. ray diagrams.</p> <p>b. Power of a lens – the degree by which light is diverged or converged by a lens. SI unit is dioptre [D].</p> <p>$P = 1/R = 1/20\text{cm} = 1/0.2\text{m} = 0.05\text{ D.}$</p>	3+2
18.	<p>Hypermetropia – the eye defect in which a person is unable to see the nearby objects clearly & distinctly. But can see distant objects clearly..</p> <p>Causes – the image is formed behind retina because of –</p> <ol style="list-style-type: none"> Reduced curvature or increased focal length. Reduced eyeball size. <p>All related diagrams.</p>	5
19.	<p>a. Resistance – the oppose or obstacle offered by conductor for flow of electricity.</p> <p>Factors – temperature, length, area of cross section & material of conductor. (with description)</p> <p>b.Schematic diagram.</p>	3+2
20.	<p>Contraception – temporary or permanent prevention of pregnancy is known as contraception.</p> <p>Methods –</p> <ol style="list-style-type: none"> Barrier method – by avoiding fusion of gametes. Example diaphragm in female & condom in male. Chemical method – oral pills – controls hormonal balance to delay ovulation. Veginal pills – contains spermicides to kill sperms. IUCD – devices incerted in female uterus for contraception. Examples – copper –T. Surgical method – part of fallopian tube in female or a part of vas deference in male surgically cut & removed. 	5
21.	<p>Compound p – is ethanol. After oxidation it gives ethanoic acid –</p> <p>q. r is hydrogen gas.</p> <p>Reactions –</p> <p>$\text{C}_2\text{H}_5\text{OH (p)} \xrightarrow{\text{potassium dichromate}} \text{CH}_3\text{COOH (q)}$</p> <p>$\text{CH}_3\text{COOH (q)} + \text{Na} \rightarrow \text{CH}_3\text{COONa} + \text{H}_2 \text{ (r)}$</p> <p>b.Micelles are water soluble spherical aggregates of soap molecules with oil at its centre and its polar head towards</p>	3+2

	water. It makes oil and grease soluble in water & hence helps in its removal.		
22.	i. keep it away from eye & wear safety glass. ii. Rub it with sand paper so as to remove the oxide layer and other impurities.		2
23.	Iron displaces copper from its copper sulphate solution (blue) to give iron sulphate(colourless) and copper. Reaction.		2
24.	Lateral displacement – the distance by which the light ray is shifted from its original path, is called lateral displacement. Factors – thickness of glass slab, material of medium, angle of incidence.		2
25.	Rain water contains impurities which helps in conduction of water. While distilled water is deionised water so it does not allow passage of electricity.		2
26.	Scatterins.		2
27.	Saturated hydrocarbons	Unsaturated hydrocarbons	2
	Give does not addition reaction with bromine. So brown colour of bromine do not disappear.	It gives addition reaction withy bromine. So brown colour disappears.	
	Gives blue flame on combustion.	Gives sooty flame on combustion.	