

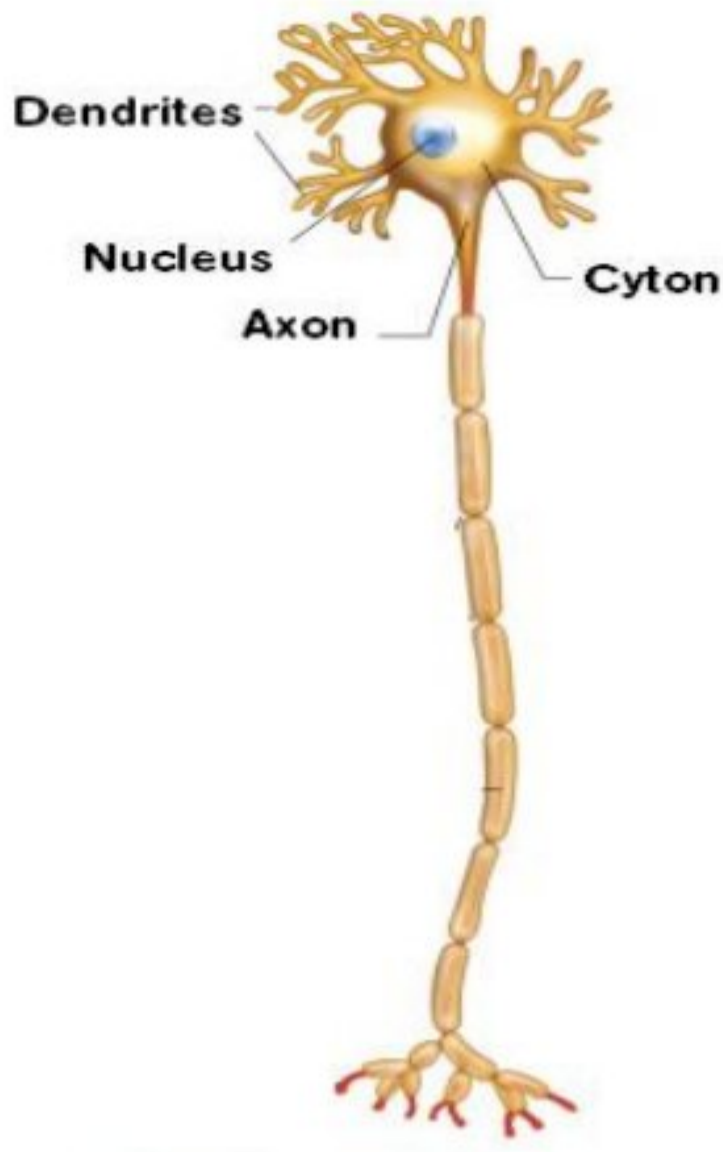
**Common Half Yearly Exam – Vellore - 2024****Standard - X****SCIENCE – Key Answer****YouTube/ Akwa Academy**

Q.No.	Answer	Marks
1	c. $98 \times 10^4$ dyne	1
2	d. $8.31 \text{ J mol}^{-1} \text{ K}^{-1}$	1
3	c. Both (a) and (b)	1
4	c. Lead	1
5	a. $6.023 \times 10^{23}$	1
6	a. Strong affinity to water	1
7	a. large surface area	1
8	d. All of the above	1
9	a. 2, 4 - D	1
10	b. J.W. Harsbberger	1
11	b. Diabetes mellitus	1
12	b. afforestation	1
13	<p>Two equal and unlike parallel forces applied simultaneously at two distinct points constitute a couple. The rotating effect of a couple is known as 'moment of a couple'. Its unit is N m</p> <p>Moment of a couple = force x perpendicular distance between the line of action of force</p>	2 marks
14	<p>Myopia, also known as short sightedness, occurs due to the lengthening of eye ball. The focal length of eye lens is reduced or the distance between eye lens and retina increases. Hence, the far point will not be infinity for such eyes and the far point has come closer. Due to this, the image of distant objects is formed before the retina.</p>	2 marks
15	<p>Ionisation energy is the minimum energy required to remove an electron from an isolated gaseous atom in its ground state to form a cation.</p> <p>It is measured in KJ/mol</p>	2 marks



16	Any two points	2 marks
17	<p>Oxidation of ethanol in the presence of alkaline potassium permanganate or acidified potassium dichromate.</p> $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow[2[\text{O}]]{\text{KMnO}_4/\text{OH}^-} \text{CH}_3\text{COOH} + \text{H}_2\text{O}$ <p>Ethanol Ethanoic acid</p>	2 marks
18	During feeding the leech attaches itself to its victim strongly by the posterior sucker. The leech makes a triradiate or Y shaped incision in the skin of the host by the jaws protruded through the mouth. The blood is sucked by muscular pharynx.	2 marks
19	a. Thalamus	1 mark
	b. Cerebellum, Pons and Medulla oblongata	1 mark
20	To attract insects these flowers are brightly coloured, have smell and nectar. The pollen grains are larger in size, the exine is pitted, spiny etc., so they can be adhered firmly on the sticky stigma.	2 marks
21	Any two points	2 marks
22	<p>Given resistance ( R ) = 5 Ω, Current ( I ) = 6 A, Time ( t ) = 5 x 60 = 300 s</p> $\begin{aligned} \text{Heat ( H )} &= I^2 R t \\ &= 6^2 \times 5 \times 300 \\ &= 54000 \text{ J} \end{aligned}$	2 marks
23	a. One calorie is defined as the amount of heat energy required to rise the temperature of 1 gram of water through 1°C.	2 marks
	b. Any two points	2 marks
24	a. Any two uses	2 marks
	b. The minimum mass of a fissile material necessary to sustain the chain reaction is called 'critical mass'.	2 marks
25	a. The number of atoms present in the molecule is called its 'atomicity'.	2 marks
	b. A solution in which no more solute can be dissolved in a definite amount of the solvent at a given temperature is called saturated solution.	2 marks



	a. since Canines are absent in Rabbits there is a gap between the incisors and premolar which is called diastema.	2 marks										
26	<p>b.</p>  <p>Structure of Neuron</p>	2 marks										
27	<p>a. During fertilization process the pollen grain produces two male gametes (two sperms). The fusion of second sperm with the secondary nucleus is called triple fusion. It forms the primary endosperm which provides food to the endosperm.</p> <p>b.</p> <table border="1" data-bbox="430 1469 1396 1825"> <thead> <tr> <th>Hormones</th> <th>Disorders</th> </tr> </thead> <tbody> <tr> <td>a) Thyroxine</td> <td>Simple goitre</td> </tr> <tr> <td>b) Insulin</td> <td>Diabetes mellitus</td> </tr> <tr> <td>c) Parathormone</td> <td>Tetany</td> </tr> <tr> <td>d) Growth hormone</td> <td>Acromegaly</td> </tr> </tbody> </table>	Hormones	Disorders	a) Thyroxine	Simple goitre	b) Insulin	Diabetes mellitus	c) Parathormone	Tetany	d) Growth hormone	Acromegaly	2 marks
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28	<p>Ethnobotany is the study of a region's plants and their practical uses through the traditional knowledge of the local culture of people.</p> <p>Any two importance</p>	2 marks 2 marks										
29	<p>a. Somatic gene therapy is the replacement of defective gene in somatic cells and Germ line gene therapy is replacement of defective gene in germ cell (egg and sperm)</p> <p>b. Stage is the background appearing when we open the scratch window. The background will most often be white. We may change the background colour as we like.</p>	2 marks 2 marks										
30	<p>a. definition</p> <p>b. definition</p>	2 marks 2 marks										

31	Any four points	4 marks
32	i. CH <sub>3</sub> COOH - ethanoic acid	1 marks
	ii. CH <sub>3</sub> COOH + C <sub>2</sub> H <sub>5</sub> OH → CH <sub>3</sub> COOC <sub>2</sub> H <sub>5</sub> + H <sub>2</sub> O ethanoic acid ethanol ethyl ethanoate	2 marks
	iii. Esterification	1 marks
33. a	a. definition	2 marks
	b. properties of light	3 marks
	c. definition	2 marks
33. b	a. definition - electric potential definition - potential difference	2 marks 2 marks
	b. any two devices	1 marks
	c. Frequency (n) = 200 Hz, velocity (v) = 400 m s <sup>-1</sup> Wavelength (λ) = v/n = 400/200 = 2 m	2 marks
34. a	a. postulates of modern atomic theory	4 marks
	b. rust – definition + equation	3 marks
34. b	a. various factors affecting solubility	3 marks
	b. definition + characteristics	2 + 2 Marks
35. a	a. any three points	3 marks
	b. definition + importance	2 + 2 Marks
35. b	a. physiological effects of Gibberellins	3 marks
	b. definition	2 marks
	c. definition	2 marks