



# SHRI VIDHYABHARATHI MATRIC HR.SEC.SCHOOL

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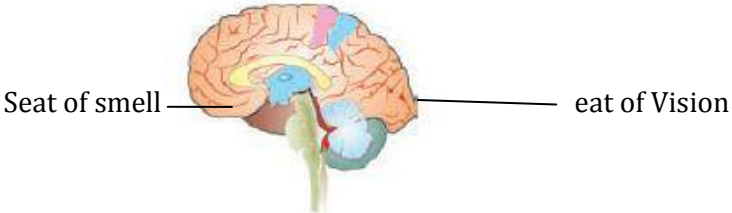
## COMMON QUARTERLY EXAMINATION - 2018 (19.09.2018)

**STD: X**

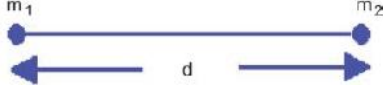
**SCIENCE ANSWER KEY**

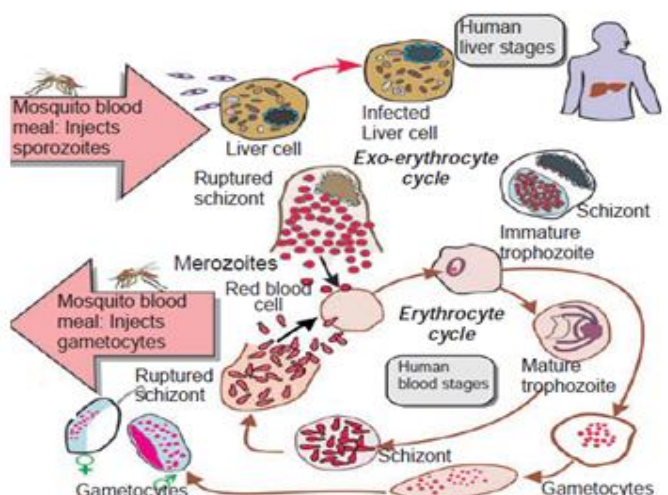
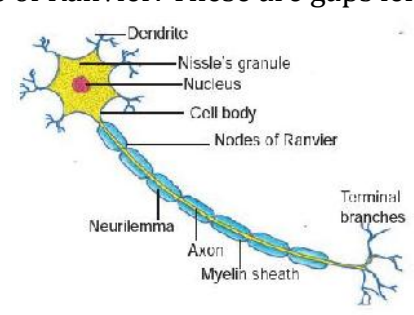
**MARKS : 75**

Q.NO	SECTION - I	MARKS
1.	b) Beta	1
2.	d) BCG	1
3.	b) Grass	1
4.	b) Thymus	1
5.	b) Pachytene	1
6.	c) Gigantism	1
7.	b) Isotones	1
8.	${}_1\text{H}^1$ , ${}_1\text{H}^2$ Isotopes, ${}_6\text{C}^{13}$ , ${}_7\text{N}^{14}$ Isotones	1
9.	Decomposition reaction	1
10.	c) 3	1
11.	a) $9.467 \times 10^{15}\text{m}$	1
12.	Tiger	1
13.	b) Liquid helium	1
14.	c) Volt meter	1
15.	b) ammonia	1

Q.NO	SECTION - II	MARKS									
16.	<p>Variation is the differences in characteristics among the individuals of the same species or among different genera of different species. Variations are of two types.</p> <p style="text-align: center;">Variations</p> <pre> graph TD     A[Variations] --&gt; B[Somatic variation]     A --&gt; C[Germinal variation] </pre>	1  1									
17.	(A) A - correct , R - Correct	2									
18.	<p><b>Match the identifying the pair</b></p> <p>i) Vaccine - Microbes ii) Natural gas - fuel iii) citric acid - organic acids iv) Monoclonal antibodies - Medicines v) Vitamins - metabolism</p>	2									
19.	Contaminated objects such as clothing, utensils, toilet articles are called fomites.	2									
20.	<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Night Blindness</th> <th style="width: 50%;">Colour Blindness</th> </tr> </thead> <tbody> <tr> <td>1. It is caused due to the deficiency of Vitamin A</td> <td>It is caused due to defective (or) mutated genes.</td> </tr> <tr> <td>2. It does not pass from one generation to another.</td> <td>It is a genetic disorder and can pass from one generation to another.</td> </tr> </tbody> </table>	Night Blindness	Colour Blindness	1. It is caused due to the deficiency of Vitamin A	It is caused due to defective (or) mutated genes.	2. It does not pass from one generation to another.	It is a genetic disorder and can pass from one generation to another.	1  1			
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21.	<p>1. Significant weight loss 2. Chronic diarrhoea 3. Prolonged fever 4. Tuberculosis, Candidiasis and recurrent herpes zoster infection</p>	1/2 1/2 1/2 1/2									
22.	<table border="1" style="width: 100%;"> <thead> <tr> <th>S.No</th> <th>Disease</th> <th>Causative Pathogens</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Typhoid</td> <td>Salmonella typhi</td> </tr> <tr> <td>2.</td> <td>Amoebic dysentery</td> <td>Entamoeba histolytica</td> </tr> </tbody> </table>	S.No	Disease	Causative Pathogens	1.	Typhoid	Salmonella typhi	2.	Amoebic dysentery	Entamoeba histolytica	1 1
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23.	<p style="text-align: center;">  </p>	2									
24.	<p>The dorsal portion of the mid brain consists of four hemispherical bodies called corpora quadrigemina. <b>Functions:</b> Controls and regulates Visual reflexes and optical orientation.</p>	1  1									
25.	<table border="1" style="width: 100%;"> <tbody> <tr> <td style="width: 10%;">i)</td> <td style="width: 40%;">Personality hormone</td> <td style="width: 50%;">Thyroxine</td> </tr> <tr> <td>ii)</td> <td>fight, flight and fright hormone</td> <td>Adrenaline and noradrenaline</td> </tr> </tbody> </table>	i)	Personality hormone	Thyroxine	ii)	fight, flight and fright hormone	Adrenaline and noradrenaline	1 1			
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26.	The process of fusion of a male gamete with an egg and the other gamete with a secondary nucleus is known as double fertilization.	2									
27.	The fusion of this nucleus with the second male gamete is known as triple fusion.	2									

28.	<b>Match it.</b> i) Autochory - Balsam ii) Anemochory - Tridax iii) Hydrochory - Lotus iv) Zoochory - Xanthium	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
29.	Increase in the solubility	2
30.	Weight percent $= \frac{\text{Weight of the solute}}{\text{Weight of solute} + \text{Weight of solvent}} \times 100$ $= \frac{10}{10 + 40} \times 100 = 20\%$	1  1
31.	R does not Explain A	2
32.	i) $C_6H_{12}O_6$ $= 6(C) + 12(H) + 6(O)$ $= 6(12) + 12(1) + 6(16)$ $= 72 + 12 + 96$ $= 180 \text{ g}$  ii) $HNO_3$ $= 1(H) + 1(N) + 3(O)$ $= 1(1) + 1(14) + 3(16)$ $= 1 + 14 + 48$ $= 63 \text{ g}$	1      1
33.	i) $\text{Number of moles} = \frac{\text{no. of atom}}{\text{Avogadro number}}$ $= \frac{12.046 \times 10^{23}}{6.023 \times 10^{23}}$ $= 2 \text{ mole}$  ii) $\text{number of moles} = \frac{\text{mass}}{\text{Atomic mass}}$ $= \frac{27.95}{55.9}$  $= 0.5 \text{ mole}$	$\frac{1}{2}$  $\frac{1}{2}$  $\frac{1}{2}$  $\frac{1}{2}$
34.	i) $HCOOH$ Reason: $HCOOH$ organic acid remaining three inorganic acid ii) Vinegar Reason: Vinegar is Acidic in nature remaining three are basic in nature	1  1
35.	i) Because, powdered magnesium offers a large surface area for the reaction to occur at a faster rate. ii) Copper sulphate acts as a catalyst and speeds up the reaction.	1  1
36.	<b>Match it:</b> i) Small dimension - Screw gauge ii) Large dimension - Scale iii) Long dimension - Light year iv) Small distance - Kilometer	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

37.	Pitch scale , Head scale	<b>1 + 1</b>									
38.	i) When the handle of the spanner is long the force required to turn the body is less. ii) This turning effect of a body depends upon the perpendicular distance of the line of action of the applied force from the axis of rotation. i.e. Moment of force = F x d Hence, the spanner has a long handle.	<b>1</b> <b>1</b>									
39.	Every object in the universe attracts every other object with a force which is directly proportional to the product of their masses and inversely proportional to the square of the distance between them.	<b>1</b>									
	 $F = \frac{G m_1 m_2}{d^2}$	<b>1</b>									
40.	1. Law of conservation of momentum 2. Newton's third law of motion	<b>1</b> <b>1</b>									
41.	<table border="1" data-bbox="268 795 1311 952"> <thead> <tr> <th>S.No</th> <th>Mass</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Mass is fundamental quantity</td> <td>Weight is a derived quantity</td> </tr> <tr> <td>2.</td> <td>It is the amount of matter contained in a body</td> <td>It is the gravitation pull acting on the body.</td> </tr> </tbody> </table>	S.No	Mass	Weight	1.	Mass is fundamental quantity	Weight is a derived quantity	2.	It is the amount of matter contained in a body	It is the gravitation pull acting on the body.	<b>1</b> <b>1</b>
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42.	Match it. i) Potential difference - Volt ii) Current - Ampere iii) Charge - Coulomb iv) Resistance - Ohm	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$									
43.	Lead 37% tin 63%, Low melting point	<b>1+ 1</b>									
44.	Energy $E = mc^2$ $m = 1 \text{ kg}$ $= 3 \times 10^8 \text{ ms}^{-1}$ $E = 1 \times (3 \times 10^8)^2$ $E = 9 \times 10^{16} \text{ J}$	<b>1</b> <b>1</b>									
45.	1. Use of alternative energy sources. 2. In industries use of electric filters to remove the pollutants 3. Planting of trees.	<b>1</b> <b>1</b>									
46.	<ul style="list-style-type: none"> <li>♣ A tiny protozoan is responsible for causing malaria.</li> <li>♣ The sexual stage of Plasmodium takes place in female Anopheles mosquito whereas the asexual stage occurs in man.</li> <li>♣ When a female Anopheles mosquito bites an infected person, these parasites enter the mosquito and undergo further development in the body of the mosquito body.</li> <li>♣ The parasites multiply within the body of the mosquito to form sporozoites that are stored in the salivary glands of the mosquito.</li> <li>♣ When these mosquitoes bite a healthy person, the sporozoites are introduced into his body. They multiply within the liver cells first and enter the Red Blood Cells(RBC) of man, resulting in the rupture of RBC.</li> <li>♣ This results in the release of toxic substance called haemozoin which is responsible for the chill and high fever, recurring every three to four days.</li> </ul>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$									

		2
47.	<p><b>Nerve cells</b></p> <ul style="list-style-type: none"> <li>❖ Nerve cells or neurons are the structural and functional units of the nervous system.</li> <li>❖ A nerve cell is a microscopic structure consisting of three major parts namely, cell body, dendrites and axon.</li> </ul> <p><b>Cell body</b></p> <ul style="list-style-type: none"> <li>❖ The cell structure is irregular in shape or polyhedral. It is also called cyton.</li> <li>❖ Cell body contains cytoplasm with typical cell organelles and certain granular bodies called Nissle's granules.</li> <li>❖ Nissle's granules are a group of ribosomes for protein synthesis.</li> </ul> <p><b>Dendrites</b></p> <ul style="list-style-type: none"> <li>❖ Dendrites or Dendrons are short fibres which branch repeatedly and protrude out of the cell body.</li> <li>❖ Dendrites transmit electrical impulses towards the cyton.</li> </ul> <p><b>Axon</b></p> <ul style="list-style-type: none"> <li>❖ One of the fibres arising from the cell body is very long with a branched distal end and it is called Axon.</li> <li>❖ The distal branch of the axon terminates in bulb-like structures called synaptic knob filled with chemicals called neuro transmitters.</li> </ul> <p><b>Parts of Axon:</b></p> <ul style="list-style-type: none"> <li>❖ Axoplasm : It is cytoplasm of axon</li> <li>❖ Myelin sheath: This is made up of many layers of Schwann cells.</li> <li>❖ Neurilemma: The outermost layer of Schwann cells.</li> <li>❖ Nodes of Ranvier: These are gaps left by myelin sheath.</li> </ul> 	<p>1/2</p> <p>1</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>2</p>



52.	<p>i) a) A space station is an artificial structure designed for humans to live and work in the outer space for a certain period of time. <span style="float: right;">½</span></p> <p>b) The only space stations launched for this specific purpose are Almaz and SalyutSeries, Sky lab and Mir. <span style="float: right;">½</span></p> <p>c) Space stations are used to study the effects of long duration space flight onthe human body. It provides a platform for greater number and length of scientific studies than it is available on other space vehicles. Space stations are used both for military and civilian purposes. The last military-used space station was Salyut 5, which was used by the Almaz program of the Soviet Union in 1976 and 1977. <span style="float: right;">½</span></p> <p>d) These stations have various drawbacks that limit the long-term habitability of the astronauts. They are very low recycling rates, relatively high radiation levels and lack of gravity. These problems cause discomfort and long-term health problems. <span style="float: right;">1</span></p> <p>ii) Every object in the universe attracts every other object with a force which is directly proportional to the product of their masses and inversely proportional to the square of the distance between them. The force acts along the line joining the centres of two objects. <span style="float: right;">1</span></p> <p>Let two objects A and B of masses <math>m_1, m_2</math> respectively lie at a distance 'd'</p> $F \propto m_1 m_2 \dots\dots(1)$ $F \propto \frac{1}{d^2} \dots\dots(2)$ <p>Combining (1) and (2)</p> $F \propto \frac{m_1 m_2}{d^2} \dots\dots\dots(3)$ $F = \frac{G m_1 m_2}{d^2} \dots\dots\dots(4)$ <p>where G is the constant of proportionality and is called the universal gravitational constant. From equation (4)</p> $G = \frac{F \cdot d^2}{m_1 m_2}$ <p>Substituting the S.I units in this equation,the unit of G is found to be <math>N m^2 kg^{-2}</math> <span style="float: right;">½</span></p> <p>The value of G is <math>6.673 \times 10^{-11} N m^2 kg^{-2}</math> <span style="float: right;">½</span></p>	
53.	<p>a) Power (P) = VI; P = 2160W; I = 9A</p> $V = \frac{P}{I}$ $= \frac{2160}{9} = 240V$ <p>b) The usual household voltage varies from 220V – 230V . The voltage of the air – conditioner ( 240V) is greater than the usual household voltage. <span style="float: right;">2</span></p> <p>c) Due to low voltage the air – conditioner will not function resulting in short circuiting. <span style="float: right;">1</span></p>	

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