

## SHRI VIDHYABHARATHI MATRIC HR.SEC.SCHOOL

## SAKKARAMPALAYAM , AGARAM (PO) ELACHIPALAYAM TIRUCHENGODE(TK), NAMAKKAL (DT) PIN-637202

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## COMMON QUARTERLY EXAMINATION - 2018 (19.09.2018)

STD: X SCIENCE ANSWER KEY MARKS: 75

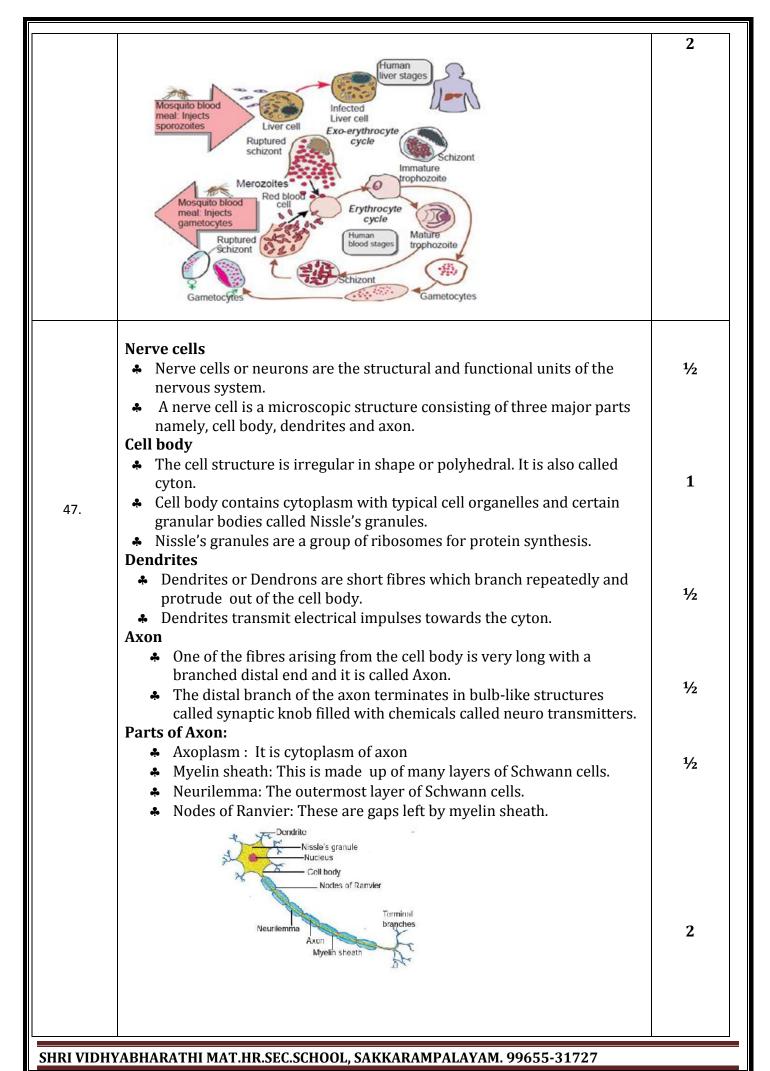
Q.NO	SECTION – I	MARKS
1.	b) Beta	1
2.	d) BCG	1
3.	b) Grass	1
4.	b) Thymus	1
5.	b) Pachytene	1
6.	c) Gigantism	1
7.	b) Isotones	1
8.	$_{1}\mathrm{H^{1}},~_{1}\mathrm{H^{2}}$ Isotopes, $_{6}\mathrm{C^{13}},_{7}\mathrm{N^{14}}$ Isotones	1
9.	Decomposition reaction	1
10.	c) 3	1
11.	a) 9.467 x 10 <sup>15</sup> m	1
12.	Tiger	1
13.	b) Liquid helium	1
14.	c) Volt meter	1
15.	b) ammonia	1

Q.NO		SECTI	ON – II	MARKS
16.	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.  Variations			1
	Somatic va	<del>,</del>	ation	1
17.	(A) A – corr	rect , R – Correct		2
18.	Match the identifying the pair  i) Vaccine - Microbes  ii) Natural gas - fuel  iii) citric acid - organic acids  iv) Monoclonal antibodies - Medicines		2	
19.	v) Vitamins Contaminat		censils, toilet articles are called fomites.	2
20.		Night Blindness	Colour Blindness	
	Vitamin A	sed due to the deficiency of	It is caused due to defective (or) mutated genes.	1
	to another		It is a genetic disorder and can pass from one generation to another.	1
21.	<ol> <li>Significant weight loss</li> <li>Chronic diarroea</li> <li>Prolonged fever</li> <li>Tuberculosis, Candidiasis and recurrent herpes zoster infection</li> </ol>			1/2 1/2 1/2 1/2 1/2
22.	S.No	Disease	Causative Pathogens	
	1.	Typhoid	Salmonella typhi	1
	2.	Amoebic dysentry	Entamoeba histolytica	1
23.	Seat of sm	ell	—— eat of Vision	2
24.	The dorsal portion of the mid brain consists of four hemispherical bodies called corpora quadrigemina.  Functions: Controls and regulates Visual reflexes and optical orientation.			1
25.		Personality hormone fight, flight and fright hormo		1 1
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 fusion.	of this nucleus with the se	cond male gamete is known as triple	2

1) Autochory - Balsam   1/2	28.	Match it.	
ii) Amenochory - Tridax   1/2   1/	20.		1/
iii) Hydrochory - Lotus   1/2   1/			
1   29.			
29.   Increase in the solubility   2			
Weight percent   Weight of the solute   Weight of solute + Weight o		TV) Zoochory - Mantinum	72
30. $ = \frac{\text{Weight of the solute}}{\text{weight of solute + Weight of solvent}} \times 100 $ $ = \frac{10}{10 + 40} \times 100 = 20\% $ 31. R does not Explain A	29.	Increase in the solubility	2
30. $ = \frac{\text{Weight of the solute}}{\text{weight of solute + Weight of solvent}} \times 100 $ $ = \frac{10}{10 + 40} \times 100 = 20\% $ 31. R does not Explain A		Weight percent	
30. $ = \frac{10}{10 + 40} \times 100 = 20\% $ 31. R does not Explain A $ = \frac{10}{10 + 40} \times 100 = 20\% $ 31. R does not Explain A $ = \frac{10}{10 + 40} \times 100 = 20\% $ 32. $ = \frac{6(12) + 12(1) + 6(16)}{6(12) + 12(9) + 6(16)} $ $ = \frac{6(12) + 12(1) + 6(16)}{6(12) + 12(9) + 6(16)} $ $ = \frac{6(12) + 12(1) + 6(16)}{6(16) + 12(1) + 12(1) + 6(16)} $ $ = \frac{72 + 12 + 96}{6(12) + 12(1) + 12(1) + 12(1)} $ $ = 11 + 14 + 12(1) + 1$		Waint of the colute	1
	30	= Weight of the solute Weight of solute + Weight of solvent	
31. R does not Explain A	] 30.	Tronglik or dolate i Tronglik or dollarik	4
31. R does not Explain A  i) $C_0 H_{12} O_0$ $= 6(C) + 12(H) + 6(0)$ $= 6(12) + 12(1) + 6(16)$ $= 72 + 12 + 96$ $= 180 g$ ii) $HNO_3$ $= 1(H) + 1(N) + 3(0)$ $= 1(1) + 1(14) + 3(16)$ $= 1 + 14 + 48$ $= 63g$ i) Number of moles = $\frac{no.of \ atom}{Avogadro \ number}$ $= \frac{12.046 \times 10^{23}}{6.023 \times 10^{23}}$ $= 2 \ mole$ ii) number of moles = $\frac{mass}{Atomicmass}$ $= \frac{27.95}{55.9}$ $= 0.5 \ mole$ 34. Reason: $HCOOH$ organic acid remaining three inorganic acid ii) Vinegar Reason: Vinegar is Acidic in nature remaining three are basic in nature  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.  5. Match it: i) Small dimension - Screw gauge ii) Large dimension - Screw gauge ii) Large dimension - Light year		$= \frac{10}{100} \times 100 = 20\%$	1
1   C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>   = 6(C) + 12(H) + 6 (O)   = 6 (12) + 12 (H) + 6 (16)   = 72 + 12 + 96   = 180 g		10 + 40	
1   C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>   = 6(C) + 12(H) + 6 (O)   = 6 (12) + 12 (H) + 6 (16)   = 72 + 12 + 96   = 180 g			
32. = 6(C) + 12(H) + 6 (O) = 6 (12) + 12 (1) + 6 (16) = 72 + 12 + 96 = 180 g  ii) HNO3 = 1(H) + 1 (N) + 3(O) = 1 (1) + 1 (14) + 3 (16) = 1 + 14 + 48 = 63g  ii) Number of moles = no.of atom Avogadro number  = \frac{12.046 \times \text{x10}^{23}}{6.023 \times \text{10}^{23}} = 2 \text{ mole}  ii) number of moles = \frac{mass}{Atomicmass}  = \frac{27.95}{55.9}  = 0.5 \text{ mole}  1) HCOOH  34. Reason: HCOOH organic acid remaining three inorganic acid ii) Vinegar Reason: Vinegar is Acidic in nature remaining three are basic in nature  1) 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  Match it: 1) Small dimension - Screw gauge 1) Large dimension - Scale 1) Large dimension - Light year	31.	R does not Explain A	2
32. = 6 (12) + 12 (1) + 6 (16) = 6 (12) + 12 (1) + 6 (16) = 72 + 12 + 96 = 180 g  ii) HN03 = 1(H) + 1 (N) + 3(0) = 1 (1) + 1 (14) + 3 (16) = 1 + 14 + 48 = 63g  ii) Number of moles = no.of atom Avogadro number  = \frac{12.046 \text{ x10}^{23}}{6.023 \text{ x 10}^{23}} = 2 \text{ mole}  ii) number of moles = \frac{mass}{Atomicmass}  = \frac{27.95}{55.9}		i) C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	
32. = 72 + 12 + 96			1
32. = 180 g  ii) HNO3 = 1(H) + 1 (N) + 3(0) = 1 (1) + 1 (14) + 3 (16) = 1 + 14 + 48 = 63g  i)Number of moles = $\frac{no.of \ atom}{Avogadro \ number}$ = $\frac{12.046 \times 10^{23}}{6.023 \times 10^{23}}$ = 2 mole  ii)number of moles = $\frac{mass}{Atomicmass}$ = $\frac{27.95}{55.9}$ 33. i) HCOOH  Reason: HCOOH organic acid remaining three inorganic acid ii) Vinegar Reason: Vinegar is Acidic in nature remaining three are basic in nature  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.  Match it: i) Small dimension - Screw gauge ii) Large dimension - Scale iii) Long dimension - Light year		= 6 (12) + 12 (1) + 6 (16)	
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			1
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33. $ = \frac{12.046 \times 10^{23}}{6.023 \times 10^{23}} $ $= 2 \text{ mole} $ $ii) number of moles = \frac{mass}{Atomicmass} $ $= \frac{27.95}{55.9} $ $= 0.5 \text{ mole} $ $1/2 $ 34. $ = 10.00000000000000000000000000000000000$		i)Number of moles = $\frac{no.0j \ atom}{1}$	16
33. $ = \frac{1}{6.023 \times 10^{23}} $ $= 2 \text{ mole} $ $ii) number of moles = \frac{mass}{Atomicmass} $ $= \frac{27.95}{55.9} $ $= 0.5 \text{ mole} $ $142$ 34. $ = \frac{1}{10000} $ Reason: HCOOH organic acid remaining three inorganic acid ii) Vinegar Reason: Vinegar is Acidic in nature remaining three are basic in nature 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. $ = \frac{mass}{10000} $ 36. i) Small dimension - Screw gauge ii) Large dimension - Screw gauge iii) Large dimension - Scale iii) Long dimension - Light year 142			/2
33.		$-12.046 \times 10^{23}$	
33.		$-\frac{6.023 \times 10^{23}}{}$	
33. $ii) number of moles = \frac{mass}{Atomicmass}$ $= \frac{27.95}{55.9}$ $= 0.5 mole$ $i) HCOOH$ 34. Reason: HCOOH organic acid remaining three inorganic acid ii) Vinegar Reason: Vinegar is Acidic in nature remaining three are basic in nature $i) Because, powdered magnesium offers a large surface area for the reaction to occur at a faster rate. ii) Copper sulphate acts as a catalyst and speeds up the reaction.  35. Match it: i) Small dimension - Screw gauge ii) Large dimension - Scale iii) Long dimension - Light year$		= 2 mole	1/2
Atomicmass $= \frac{27.95}{55.9}$ $= 0.5  mole$ $1/2$ 34. In the proof of the proof o	33.	::) mumb on of moles mass	7-
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ii) Copper sulphate acts as a catalyst and speeds up the reaction.  Match it:  i) Small dimension - Screw gauge ii) Large dimension - Scale iii) Long dimension - Light year  1  1  1  1  1  1  1  1  1  1  1  1  1	35		1
Match it: i) Small dimension - Screw gauge ii) Large dimension - Scale iii) Long dimension - Light year  Match it: 1/2 1/2 1/2	33.		1
i) Small dimension - Screw gauge ii) Large dimension - Scale iii) Long dimension - Light year  1/2 1/2			-
ii) Large dimension – Scale iii) Long dimension – Light year  1/2 1/2	36.		1/2
iii) Long dimension – Light year ½			

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37.	Pitch scale , Head scale	1+1	
	i) When the handle of the spanner is long the force required to turn the	1	
38.	<ul> <li>body is less.</li> <li>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.</li> <li>i.e. Moment of force = F x d</li> <li>Hence, the spanner has a long handle.</li> </ul>		
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.		
	$F = \frac{G m_1 m_2}{d^2}$	1	
40.	Law of conservation of momentum     Newton's third law of motion	1 1	
41.	S.NoMassWeight1.Mass is fundamental quantityWeight is a derived quantity2.It is the amount of matterIt is the gravitation pull	1	
	contained in a body acting on the body.	1	
42.	Match it. i) Potential difference - Volt		
43.	Lead 37% tin 63%, Low melting point	1+1	
44.	Energy $E = mc^2$ m = 1  kg $= 3 \times 10^8 \text{ ms}^{-1}$	1	
	$E = 1 \times (3 \times 10^8)^2$ $E = 9 \times 10^{16} \text{ J}$		
45.	1. Use of alternative energy sources.     2. In industries use of electric filters to remove the pollutants		
	3. Planting of trees.	1	
	A tiny protozoan is responsible for causing malaria.	1/2	
46.	The sexual stage of Plasmodium takes place in female Anopheles mosquito whereas the asexual stage occurs in man.	1/2	
	* When a female Anopheles mosquito bites an infected person, these parasites enter the mosquito and undergo further development in the	1/2	
	<ul> <li>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 hody. They multiply within the liver collaboration of the control of</li></ul>	1/2	
	<ul> <li>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</li> </ul>	1/2	
	days.	1/2	
<u> </u>			



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48.	<ul> <li>The seed is bulky, oval and slightly indented on one side.</li> <li>On this side, there is a short longitudinal, whitish ridge called the raphae.</li> <li>At one end of the raphae, there is a minute opening known as germ pore or micropyle.</li> <li>The embryo is enclosed by the seed coat.</li> <li>It consists of cotyledons attached to the primary axis</li> <li>which has a rudimentary root portion called the radicle and a rudimentary stem portion known as plumule.</li> <li>The tip of the radicle projects outside ,and is nearer to the micropyle.</li> <li>The Plumule is placed between the two cotyledons and consists of a shoot axis and a small bud having two tiny folded leaves.</li> </ul>	2
49.	<ol> <li>Generation of waste products which contain mercury, uranium, thorium, arsenic and other heavy metals, which are harmful to human health and environment.</li> <li>Sulphur particles present in the coal causes acid rain.</li> <li>Interference with ground water and water table levels.</li> <li>Contamination of land and water bodies.</li> <li>Dust pollution.</li> <li>Release of CO<sub>2</sub>, a green house gas, causing climate change and global warming.</li> <li>Coal is the largest contributor to the man-made increase of CO<sub>2</sub> in the air.</li> </ol>	5
50.	<ul> <li>Avogadro's Law: Equal volumes of all gases under the same conditions of temperature and pressure contain an equal number of molecules.</li> <li>Applications of Avogadro's Law</li> <li>1. It is used to determine the atomicity of gases.</li> <li>2. It is helpful in determining the molecular formula of gaseous compounds.</li> <li>3. It establishes the relationship between the vapour density and molecular mass of a gas.</li> <li>4. It gives the value of molar volume of gases at STP. Molar Volume of a gas at STP=22.4 lit (or) 22400 cm<sup>3</sup>.</li> <li>5. It explains Gay Lussac's Law effectively.</li> </ul>	3
51.	<ul> <li>i) It is a chemical reaction in which oxidation and reduction takes place simultaneously.</li> <li>ii) a) Zn</li> <li>b) CuSO<sub>4</sub></li> <li>iii) Two electrons of zinc is given to copper.</li> <li>Zn → Zn <sup>2+</sup> + 2e<sup>-</sup></li> <li>Cu<sup>2+</sup> + 2e<sup>-</sup> → Cu</li> </ul>	1 1 1
	iv) Oxidation reaction : $Zn \rightarrow Zn^{2+} + 2e^{-}$ Reduction reaction: $Cu^{2+} + 2e^{-} \rightarrow Cu$ $CuSO_4 \rightarrow Cu^{2+} + SO_4^{2-}$ Redox reaction : $Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu$	2

	i) a) A space station is an artificial structure designed for humans to live	1/2
	<ul><li>and work in the outer space for a certain period of time.</li><li>b) The only space stations launched for this specific purpose are Almaz and</li></ul>	1/2
	SalyutSeries, Sky lab and Mir. 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	1/2
52.	military-used space station was Salyut 5, which was used by the Almaz program of the Soviet Union in 1976 and 1977. 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.	1
	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. Let two objects A and B of masses m1, m2 respectively lie at a distance 'd' $F \alpha m_1 m_2 \ldots (1)$	1
	$F\alpha \frac{1}{d^2} \dots (2)$ Combining (1) and (2)	1/2
	Combining (1) and (2)	
	$F\alpha \frac{m_1 m_2}{d^2}$ (3)	
	$F = \frac{Gm_1m_2}{d^2} \dots (4)$	
	where G is the constant of proportionality and is called the universal gravitational constant. From equation (4)	
	$G = \frac{F \cdot d^2}{}$	
	$m_1 m_2$ Substituting the S.I units in this equation,the unit of G is found to be N m <sup>2</sup>	1/2
	kg <sup>-2</sup> The value of G is 6.673×10 <sup>-11</sup> N m <sup>2</sup> kg <sup>-2</sup>	1/2
	a) Power (P) = VI; P = 2160W; I = 9A	
53.	$V = \frac{P}{I} = \frac{2160}{9} = 240V$	2
	b) The usual household voltage varies from 220V – 230V . The voltage of the air – conditioner ( 240V) is greater than the usual household voltage.	2
	c) Due to low voltage the air – conditioner will not function resulting in short circuiting.	1

P. SITHESWARAN, M.Sc., B.Ed., P. YUGAMANI, M.Sc., B.Ed., G. HARI HARAN M.Sc., B.Ed., M. POONGODI, B.Sc., B.Ed., **DEPARTMENT OF SCIENCE** SHRI VIDHYABHARATHI MATRIC HR.SEC.SCHOOL SAKKARAMPALAYAM, AGARAM (PO) ELACHIPALAYAM TIRUCHENGODE(TK), NAMAKKAL (DT) PIN-637202 Cell: 9585218526, 8344551636