

ಕರ್ನಾಟಕ ಪ್ರೌಢ ಶಿಕ್ಷಣ ಪರಿಷತ್, ಮಂಡಳಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

**KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESWARAM,
BANGALORE – 560 003**

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಏಪ್ರಿಲ್ – 2012

S. S. L. C. EXAMINATION, APRIL, 2012

ಮಾದರಿ ಉತ್ತರಗಳು
MODEL ANSWERS

ದಿನಾಂಕ : 05. 04. 2012]

Date : 05. 04. 2012]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E**

CODE NO. : **83-E**

ವಿಷಯ : ವಿಜ್ಞಾನ
Subject : SCIENCE

(ಭೌತಶಾಸ್ತ್ರ, ರಸಾಯನಶಾಸ್ತ್ರ ಮತ್ತು ಜೀವಶಾಸ್ತ್ರ)
(Physics, Chemistry & Biology)

[ಪರಮಾವಧಿ ಅಂಕಗಳು : 100

[Max. Marks : 100

(English Version)

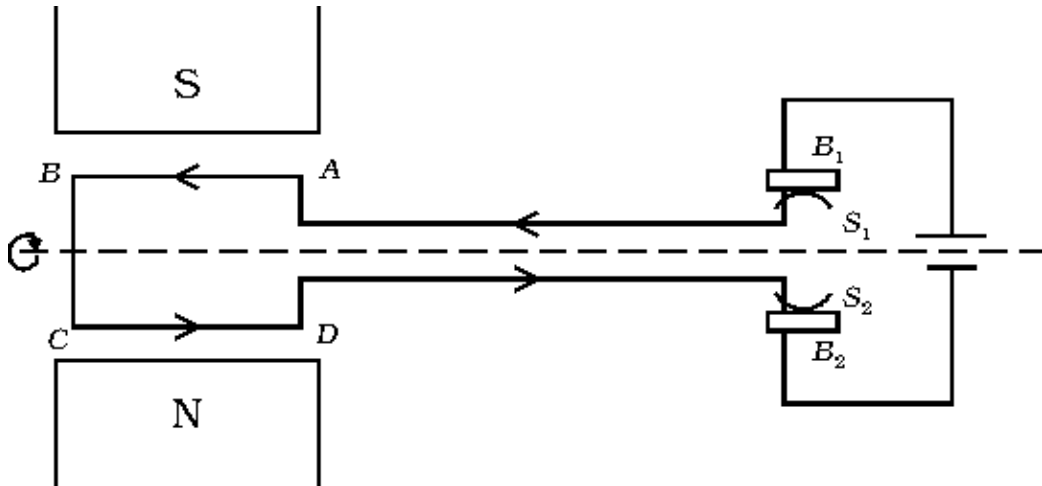
Qn. Nos.	Ans. Key	Value Points	Marks Allotted
PART - A (Physics & Chemistry) (Marks : 65)			
1.	C	Vitamin D	1
2.	A	Laser ranging	1
3.	D	Exhaust stroke	1
4.	C	it releases more carbon monoxide	1
5.	C	To study the working of heart	1
6.	A	2	1
7.	D	Non-edible vegetable oil	1
8.	B	long chain hydrocarbon, sodium hydroxide, sulphuric acid	1
9.	D	ultraviolet rays	1
10.	D	increases area of absorption.	1

[Turn over

Qn. Nos.	Value Points	Marks Allotted	
11.	A runner lean towards the centre of the curve while running in a curved path to obtain the necessary centripetal force.	1	
12.	In the mixture, sand is heavier and experiences larger centrifugal reaction.	1	
13.	i) Solar lamp ii) Street light iii) Artificial satellite (Any other suitable answer)	$\frac{1}{2} + \frac{1}{2} = 1$	
14.	— The energy from the interior is prevented from reaching the photosphere in the region of sun-spots. Therefore the sun-spots appear dark. OR — When compared to other regions sun-spots have relatively low temperature.	1	
15.	— Time of cooking is saved and so time of combustion of fuel is also saved.	1	
16.	— Permutit cannot remove lead, manganese and iron salts. — Water contains excess sodium salts. (Any one point)	1	
17.	List - A a) Propane b) Acetylene c) Ethane d) Butyne	List - B iv) C_3H_8 vii) C_2H_2 i) C_2H_6 iii) C_4H_6 4×1	4
18.	3	1	
19.	Doppler effect	1	
20.	Annealing	1	
21.	Common parts present in motor and dynamo are i) magnetic poles ii) armature.	1 1	

Qn. Nos.	Value Points	Marks Allotted
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22.



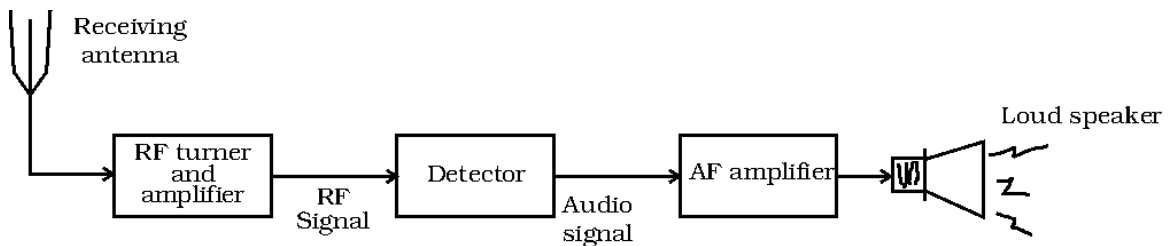
2

23.

- i) The phenomenon is instantaneous
 - ii) It is a surface phenomenon
 - iii) There is a certain frequency called threshold frequency below which no photoelectric is produced.
 - iv) Number of photoelectrons is directly proportional to the intensity of the radiation (incident)
 - v) Kinetic energy is directly proportional to the frequency of incident light.
- (Any two)

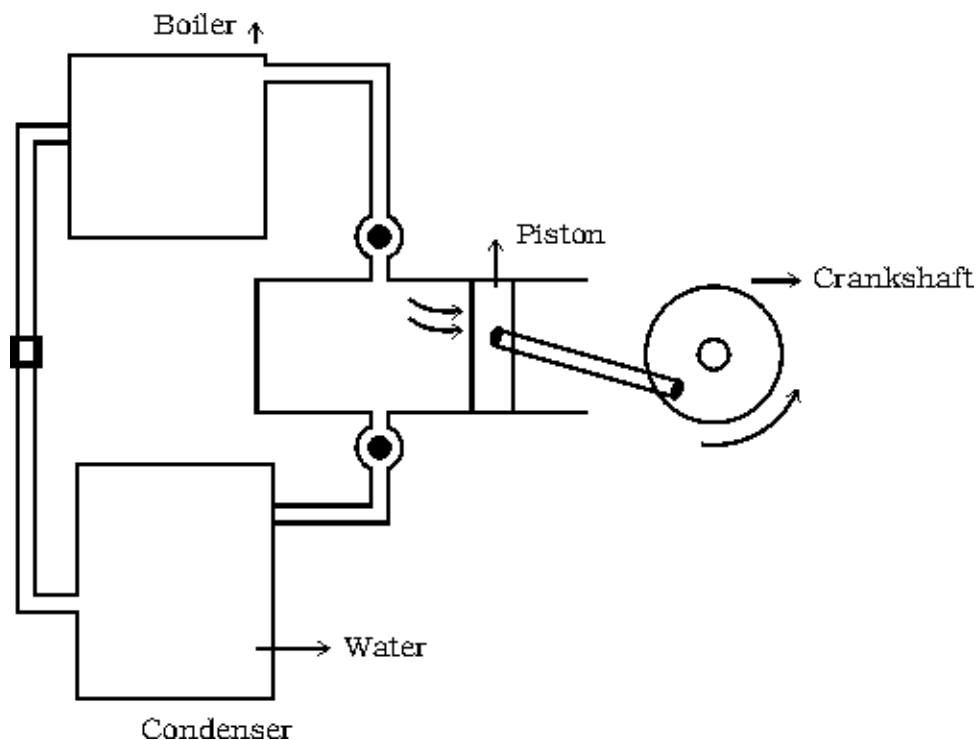
1 + 1 = 2

24.



2

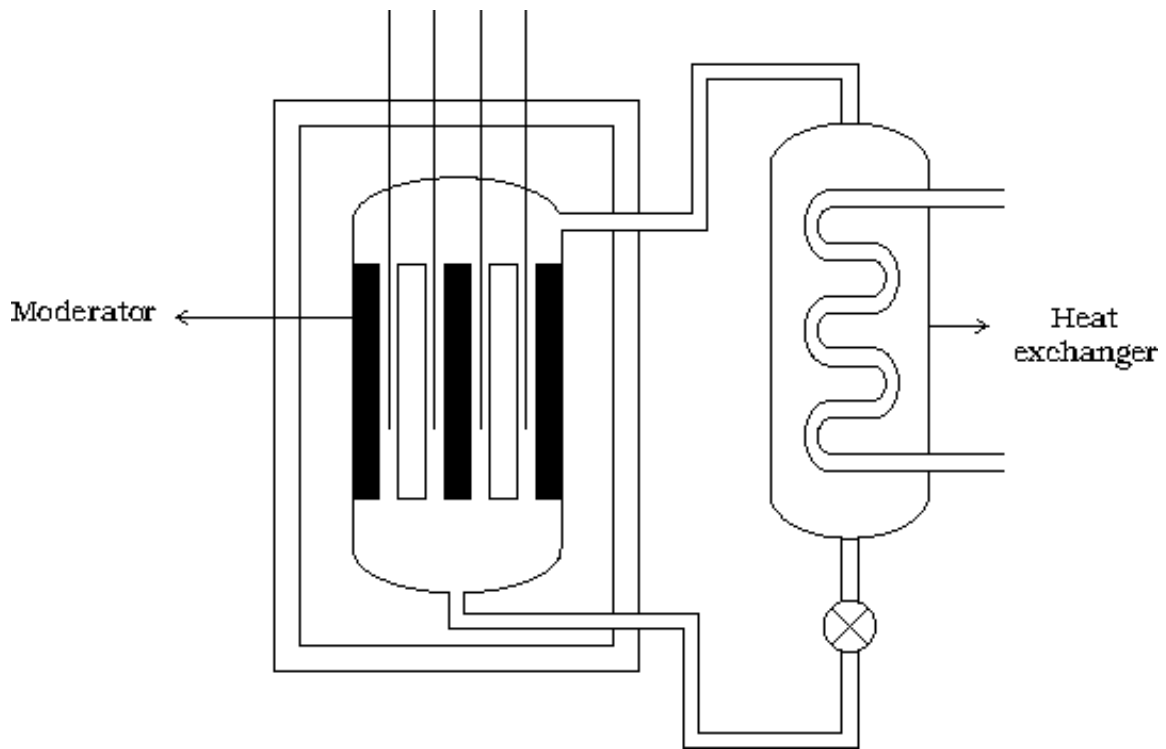
Qn. Nos.	Value Points	Marks Allotted
25.		



26.	<ul style="list-style-type: none"> — Aluminium chloride — $2\text{Al} + 3\text{Cl}_2 \rightarrow 2\text{AlCl}_3$ 	2	1	1	2
27.	<p>a) A mixture of silicon and coke is heated in electric furnace to about 3073 K and silicon carbide is formed.</p> $\text{Si} + \text{C} \rightarrow \text{SiC}$ <p>b) We obtain hydrogen gas from silicon and water as follows. Silicon does not react with water. But red hot silicon decomposes steam liberating hydrogen. OR</p> $\text{Si} + 2\text{H}_2\text{O} \rightarrow \text{SiO}_2 + 2\text{H}_2 \uparrow$ <p>(Red hot) (steam)</p>	1	1	2	

Qn. Nos.	Value Points	Marks Allotted										
28.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Thermosetting Plastics</td> <td style="width: 50%; border: none;">Thermoplastics</td> </tr> <tr> <td style="border: none;">a) Do not become soft on heating</td> <td style="border: none;">i) Becomes soft on heating</td> </tr> <tr> <td style="border: none;">b) Cannot be recycled</td> <td style="border: none;">ii) Can be recycled</td> </tr> <tr> <td style="border: none;">c) We cannot mould them</td> <td style="border: none;">iii) We can mould them</td> </tr> <tr> <td colspan="2" style="border: none; text-align: right;">(Any two)</td> </tr> </table>	Thermosetting Plastics	Thermoplastics	a) Do not become soft on heating	i) Becomes soft on heating	b) Cannot be recycled	ii) Can be recycled	c) We cannot mould them	iii) We can mould them	(Any two)		1 + 1 = 2
Thermosetting Plastics	Thermoplastics											
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(Any two)												
29.	<p>— Water that does not give lather with soap easily is called hard water.</p> <p>— Magnesium bicarbonate and calcium bicarbonate.</p>	1 1 2										
30.	<p><i>Kepler's First law</i> : The planets move in elliptical orbits around the sun, with the sun at one focus.</p> <p><i>Kepler's Second law</i> : An imaginary line drawn from the sun to a planet, sweeps equal areas in equal intervals of time.</p> <p><i>Kepler's Third law</i> : The cube of the average distance of a planet from the sun is proportional to the square of its period of revolution. ($r^3 \propto T^2$)</p>	1 1 1 3										
31.	<p>a) The age of wood can be found by using radio-carbon.</p> <p>b) $12 \text{ minutes} = \frac{12}{3} = 4 \text{ half lives}$</p> <p>$\frac{N}{2}$</p> <p>$\frac{N}{4}$</p> <p>$\frac{N}{8} = 2 \quad \therefore \frac{N}{16} = 2 \quad \therefore N = 32 \text{ grams.}$</p> <p>(This calculation may be considered by relatively other method and also consider with only answer)</p>	1 2 3										


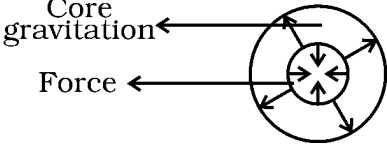
Qn. Nos.	Value Points	Marks Allotted
32.	<ul style="list-style-type: none"> — Spectroscope is an instrument to obtain pure spectrum of a composite light using a prism. — <i>Function of collimator</i> : Light from the slit is rendered narrow and parallel by collimator. — <i>Function of telescope</i> : To get magnified and bright image of the spectrum. 	<p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1 3</p>
33.		



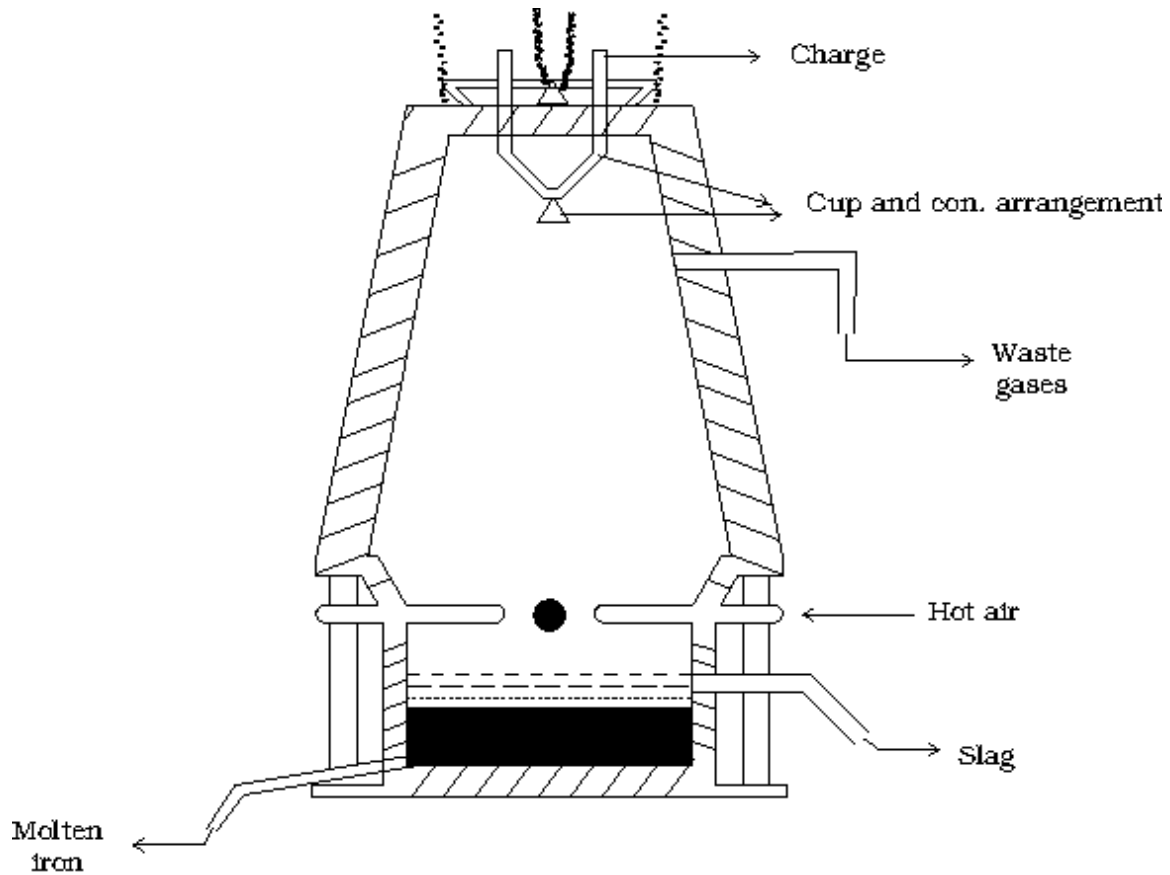
Complete figure — 2

Labelling — 1

3

Qn. Nos.	Value Points	Marks Allotted
34.	<p>a) The velocity of the body along the circular path is called orbital velocity.</p> <p>b) $V_o = \sqrt{\frac{GM_E}{(R + h)}}$ $V_o = \text{Orbital velocity}$ $M_E = \text{Mass of the earth}$ $G = \text{Gravitational constant}$ $R = \text{Radius of the earth}$ $h = \text{Height from earth's surface.}$</p> <p>c) $V_e = \sqrt{2} \cdot V_o.$</p>	<p>1</p> <p>2</p> <p>1 4</p>
35.	<p>i) <i>Protostar</i> :</p> <ul style="list-style-type: none"> — It begins with accretion of hydrogen and helium gases. — Process of accretion continues for millions of years — When the accretion is sufficiently large it contracts under its own gravity. — Contracting dense gaseous matter <div style="text-align: center;">  <p>→ Protostar.</p> </div> <p>ii) <i>Steady star</i> :</p> <ul style="list-style-type: none"> — During gravitational contraction of Protostar the atoms collide with each other — The kinetic energy of the atoms increases and temperature of the star also increases gradually. — When the temperature is about 1 million degree Centigrade thermonuclear fusion starts. Hydrogen nuclei fuse into helium. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> — The inner pull of gravity is balanced by the outward nuclear force, star becomes steady. <p><i>Note</i> : Student can write answers in their own words also. If expressed in figure only, give one mark.</p>	<p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1 4</p>

Qn. Nos.	Value Points	Marks Allotted
36.		

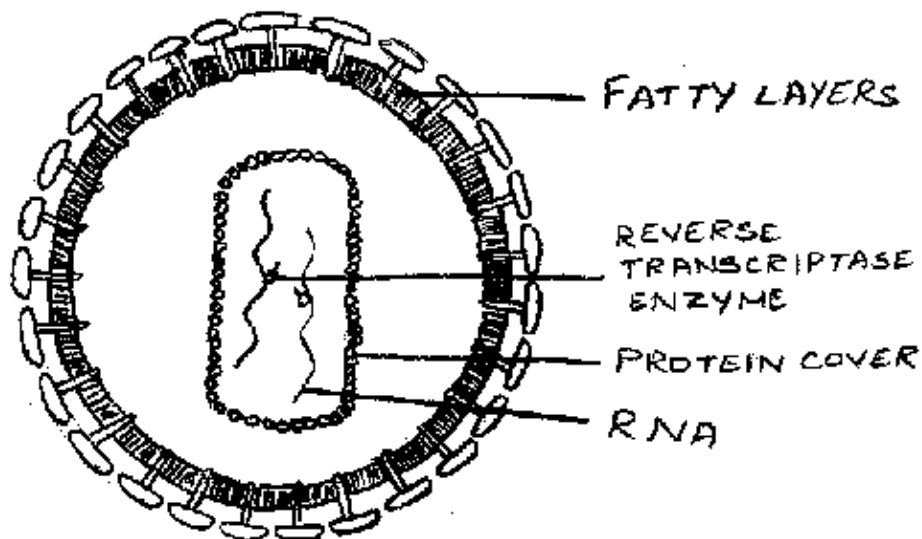


Complete figure — $2\frac{1}{2}$
 Any three parts — $1\frac{1}{2}$ 4

Qn. Nos.	Ans. Key	Value Points	Marks Allotted
PART - B (Biology) (Marks : 35)			
37.	B	Ectocarpus	1
38.	A	DNA fingerprint technology	1
39.	B	islet of Langerhans	1
40.	A	Respiration	1
41.	D	cerebrum.	1

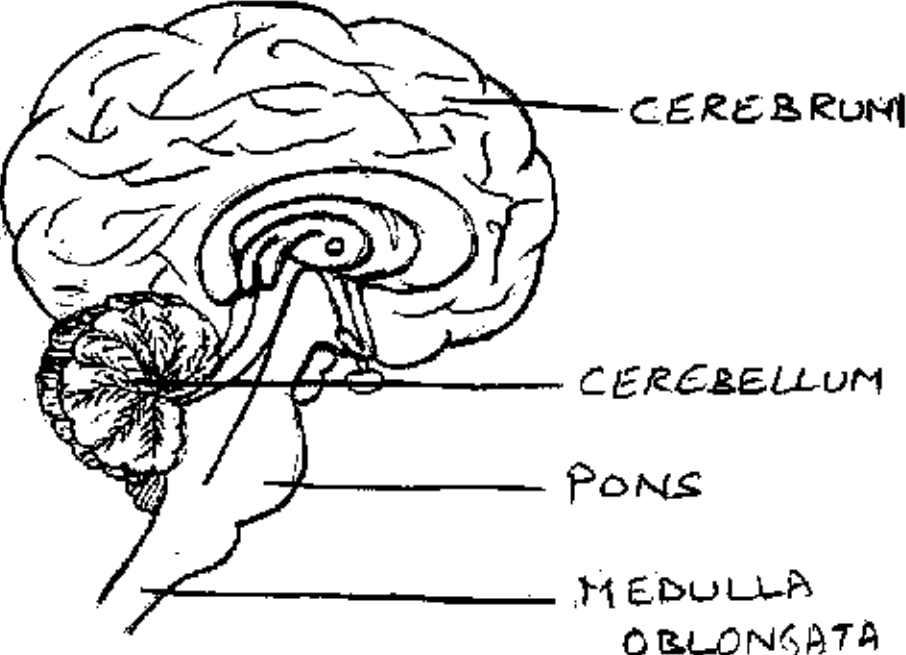
Qn. Nos.	Value Points	Marks Allotted										
42.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">A</td> <td style="width: 50%; text-align: center;">B</td> </tr> <tr> <td>a) Snake</td> <td>vii) three chambered heart, oviparous, poikilothermic animal.</td> </tr> <tr> <td>b) Sea horse</td> <td>iv) two chambered heart, oviparous, poikilothermic animal</td> </tr> <tr> <td>c) Rabbit</td> <td>i) four chambered heart, viviparous, homeothermic animal</td> </tr> <tr> <td>d) Crow</td> <td>iii) four chambered heart, oviparous, homeothermic animal</td> </tr> </table>	A	B	a) Snake	vii) three chambered heart, oviparous, poikilothermic animal.	b) Sea horse	iv) two chambered heart, oviparous, poikilothermic animal	c) Rabbit	i) four chambered heart, viviparous, homeothermic animal	d) Crow	iii) four chambered heart, oviparous, homeothermic animal	<p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1 4</p>
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43.	The science of applying biological processes is called biotechnology.	1										
44.	Coloured ice candy may contain unpermitted colours which may cause health problems so we should avoid eating coloured ice candy.	1										
45.	Language is learnt by imitation. If sounds are not heard then the baby may not be able to speak the same. If there is no Coordination between ear and brain.	1										
46.	In a diabetic person lipids (fats) stored in the adipose will be oxidised to produce energy, as a result he becomes thin. Hence he may not be insulated against cold.	1										
47.	Tears keep the eyes moist, tears act as antiseptic agent and kills microbes.	1 + 1										
48.	a) Honey — Jaggery or sugar syrup b) Turmeric powder — Metanil yellow c) Coffee powder — Tamarind seed powder d) Pepper — Dry papaya seeds	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 2										
49.	<i>Symptoms of myxoedema :</i> a) Low metabolic rate b) Loss of mental and physical vigour c) Increase in weight d) Thickening of skin e) Lower heart rate. (Any four to be written)	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 2										

Qn. Nos.	Value Points	Marks Allotted						
50.	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center; width: 50%;">Gaseous cycle</td> <td style="text-align: center; width: 50%;">Sedimentary cycle</td> </tr> <tr> <td>a) Reservoir pool is commonly the atmosphere or hydrosphere</td> <td>— Reservoir pool will be lithosphere</td> </tr> <tr> <td>b) These are perfect cycles</td> <td>— these are imperfect cycles</td> </tr> </table>	Gaseous cycle	Sedimentary cycle	a) Reservoir pool is commonly the atmosphere or hydrosphere	— Reservoir pool will be lithosphere	b) These are perfect cycles	— these are imperfect cycles	1 1
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a) Reservoir pool is commonly the atmosphere or hydrosphere	— Reservoir pool will be lithosphere							
b) These are perfect cycles	— these are imperfect cycles							
51.	<p>a) Survival chances of offsprings are greater than the survival chances of eggs.</p> <p>b) Parents feel easy to rear their young ones, than to protect the eggs and later nourish the hatched young ones.</p>	1 1 2						
52.	<p>When a person resides in the midst of the city he is prone to effects of air pollution like bronchitis, allergies, skin irritation and eye irritations. He may be advised to shift his residence to overcome those problems.</p>	2						
53.	<p>a) Epidermis is made of only one type of cells which are structurally and functionally similar.</p> <p>b) Insectivorous plants grow in region where soil is poor in nitrogen. Hence to overcome this deficiency they trap and digest insects. Hence crops may not grow properly in soil which is poor in nitrogen. So the farmer has decided not to grow crops in that land.</p>	1 2						
54.								



(Any two parts to be labelled)

2 + 1

Qn. Nos.	Value Points	Marks Allotted
55.	 <p>CEREBRUM</p> <p>CEREBELLUM</p> <p>PONS</p> <p>MEDULLA OBLONGATA</p>	2 + 2