

CCE RR
UNREVISED FULL SYLLABUS

A

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD,
MALLESHWARAM, BENGALURU - 560 003

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಜೂನ್ — 2023

S. S. L. C. EXAMINATION, JUNE — 2023

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 13. 06. 2023]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Phy)**

Date : 13. 06. 2023]

CODE NO. : **83-E (Phy)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / **Regular Repeater**)

(ಭೌತ ವಿಜ್ಞಾನ / **Physics**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

[**Max. Marks : 80**

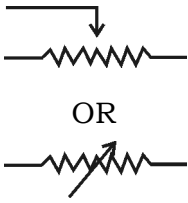

PART - A

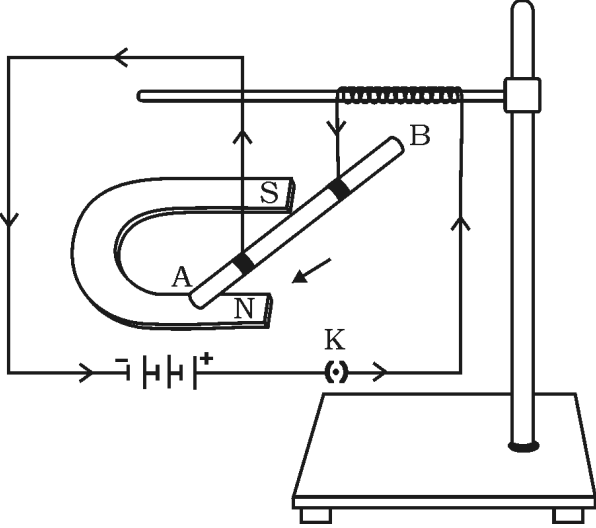
(**Physics**)

Qn. Nos.	Value Points	Total
I.	Multiple choice questions :	4 × 1 = 4
1.	A device that converts electrical energy into mechanical energy is (A) Electric generator (B) Electric motor (C) Galvanometer (D) Voltmeter. Ans. : (B) Electric motor	1

RR-A (MA)-PHY

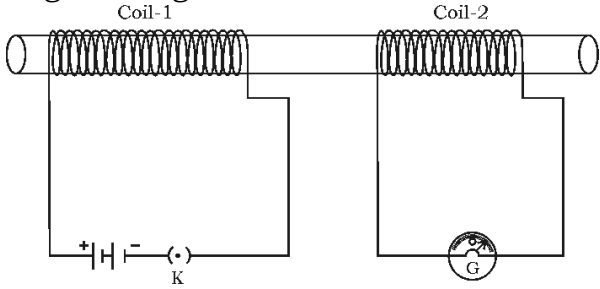
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Qn. Nos.	Value Points	Total
2.	<p>A mirror forms an erect and enlarged image of an object. Then the type of the mirror and the nature of the image respectively are</p> <p>(A) convex mirror and virtual image (B) concave mirror and real image (C) plane mirror and real image (D) concave mirror and virtual image.</p> <p><i>Ans. :</i></p> <p>(D) concave mirror and virtual image</p>	1
3.	<p>The power plant that generates electricity without using the turbines is</p> <p>(A) Thermal power plant (B) Hydro power plant (C) Solar power plant (D) Nuclear power plant.</p> <p><i>Ans. :</i></p> <p>(C) Solar power plant</p>	1
4.	<p>Imagine, you are holding a straight current carrying conductor as per the right hand thumb rule. If the thumb is upward, then the direction of the field lines of the magnetic field is</p> <p>(A) downward (B) upward (C) anti-clockwise (D) clockwise.</p> <p><i>Ans. :</i></p> <p>(C) anti-clockwise</p>	1
II.	Answer the following questions :	2 × 1 = 2
5.	<p>Draw the symbol diagram of rheostat used in electric circuit.</p> <p><i>Ans. :</i></p> <div style="text-align: center;">  <p>OR</p>  </div>	1

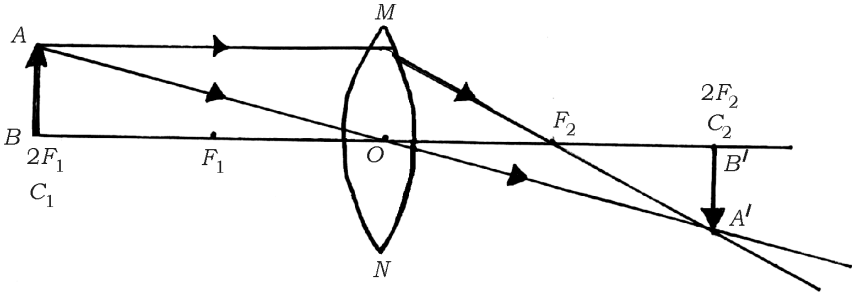
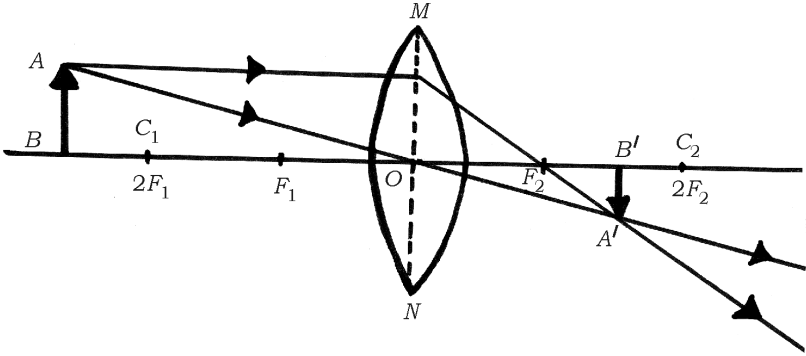
Qn. Nos.	Value Points	Total
6.	<p>Observe the figure and mention the direction of the force acting on the current carrying conductor AB. Name the rule that helped you to find the direction of the force.</p>  <p><i>Ans. :</i></p> <p>Towards left</p> <p>OR</p> <p>Towards the magnet (Or towards north pole of the magnet)</p> <p>Fleming's left hand rule</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p>
III.	<p>Answer the following questions : 2 × 2 = 4</p> <p>7. Name any two fossil fuels and mention any two disadvantages of using fossil fuels.</p> <p><i>Ans. :</i></p> <ul style="list-style-type: none"> ★ Coal ★ Natural gas ★ Petroleum <p style="text-align: right;">(Any two)</p>	<p>$\frac{1}{2} + \frac{1}{2}$</p>

Qn. Nos.	Value Points	Total
8.	<p>★ Air pollution</p> <p>★ Acid rain</p> <p>★ Greenhouse effect</p> <p>★ Pollutes water and land</p> <p>★ Global warming (any suitable answer)</p> <p style="text-align: right;">(Any two)</p> <p>1000 J of heat is produced each 2 seconds in a 5Ω resistor. Find the potential difference across the resistor.</p> <p style="text-align: center;">OR</p> <p>A wire of given material having length 'l' and area of cross-section 'A' has a resistance of '4Ω'. Find the resistance of another wire of the same material having length $\frac{l}{2}$ and area of cross-section '$2A$'.</p> <p>Ans. :</p> <p>Solution : $H = 1000 \text{ J}$</p> <p style="padding-left: 40px;">$R = 5 \Omega$</p> <p style="padding-left: 40px;">$t = 2 \text{ seconds}$</p> <p style="padding-left: 40px;">$V = ?$</p> <p style="padding-left: 40px;">$H = I^2 R t$</p> <p>$\therefore I = \sqrt{\frac{H}{R t}}$</p> <p style="padding-left: 40px;">$= \sqrt{\frac{1000 \text{ J}}{5 \Omega \times 2 \text{ s}}} = \sqrt{\frac{1000}{10}}$</p> <p style="padding-left: 40px;">$I = 10 \text{ A}$</p> <p>Potential difference across the resistor</p> <p style="padding-left: 40px;">$V = IR$</p> <p style="padding-left: 40px;">$= 10 \times 5$</p> <p style="padding-left: 40px;">$V = 50 \text{ V}$</p> <p style="text-align: center;">OR</p>	<p style="text-align: center;">$\frac{1}{2} + \frac{1}{2}$</p> <p style="text-align: center;">2</p> <p style="text-align: center;">$\frac{1}{2}$</p> <p style="text-align: center;">$\frac{1}{2}$</p> <p style="text-align: center;">$\frac{1}{2}$</p> <p style="text-align: center;">$\frac{1}{2}$</p> <p style="text-align: center;">2</p>

Qn. Nos.	Value Points	Total
	<p>Solution : For first wire</p> $R_1 = \rho \frac{l}{A} = 4 \Omega$ <p>Now for second wire</p> $R_2 = \rho \frac{\frac{l}{2}}{2A}$ $= \frac{1}{4} \cdot \rho \frac{l}{A}$ $R_2 = \frac{1}{4} \cdot R_1$ <p>\therefore The resistance of the another wire is</p> $\frac{1}{4} \cdot 4 = 1 \Omega$	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>2</p>
IV.	Answer the following questions :	3 × 3 = 9
9.	<p>What is meant by the 'aperture' of a spherical mirror ? Mention the four uses of a concave mirror.</p> <p style="text-align: center;">OR</p> <p>a) What is meant by the power of a lens ? Write the formula used to find the power of a lens. What is the SI unit of power of a lens ?</p> <p>b) If the focal lengths of two lenses A and B are + 0.50 m and - 0.40 m respectively. Mention the types of these lenses in the same order.</p>	
	<p>Ans. :</p> <ul style="list-style-type: none"> ★ The diameter of the reflecting surface of spherical mirror. 1 ★ Used in torches, search-lights and vehicle head lights to get parallel beam of light $\frac{1}{2}$ ★ as a shaving mirror $\frac{1}{2}$ ★ by dentists to see large images of the teeth $\frac{1}{2}$ ★ in solar furnaces to concentrate sunlight $\frac{1}{2}$ <p style="text-align: center;">OR</p>	<p>3</p>

Qn. Nos.	Value Points	Total
a)	<ul style="list-style-type: none"> ★ The degree of convergence or divergence of light rays is the power of a lens $\frac{1}{2}$ ★ $P = \frac{1}{f}$ 1 ★ SI unit of power of a lens is 'diopetre'. OR 'D' $\frac{1}{2}$ 	3
b)	<ul style="list-style-type: none"> ★ + 0.50 m → Convex lens $\frac{1}{2}$ ★ - 0.40 m → Concave lens $\frac{1}{2}$ 	
10.	<p>Observe the given diagram :</p> <div style="text-align: center;">  </div> <p>Explain the experiment related to this diagram. What conclusions can be drawn from this experiment ?</p> <p>Ans. :</p> <ul style="list-style-type: none"> ★ Take two different coils of copper wire say 100 and 50 turns respectively. Insert them over a non-conducting cylindrical roll. $\frac{1}{2}$ ★ Connect the Coil-1 in series with a battery and plug key, Coil-2 with galvanometer $\frac{1}{2}$ ★ When the key is plugged in, needle of the galvanometer deflects and returns to zero. This indicates the presence of current in the Coil-2 $\frac{1}{2}$ 	

Qn. Nos.	Value Points	Total
	<p>★ Disconnect Coil-1 from battery. Needle of the galvanometer deflects in the opposite direction and returns to zero. This indicates the opposite direction of the current. $\frac{1}{2}$</p> <p><i>Conclusions :</i></p> <p>★ Changing electric current in Coil-1 induces current in Coil-2. This is electromagnetic induction. $\frac{1}{2}$</p> <p>★ This is due to the change in the magnetic field. $\frac{1}{2}$</p>	3
11.	<p>Draw the ray diagram for the image formation by a convex lens, when the object is placed at $2F_1$. With the help of the ray diagram mention the position and the nature of the image formed.</p> <p style="text-align: center;">[F_1 : Principal focus of the lens]</p> <p style="text-align: center;">OR</p> <p>Draw the ray diagram for the image formation in a convex lens when the object is placed beyond $2F_1$. With the help of the ray diagram mention the position and the nature of the image formed.</p> <p style="text-align: center;">[F_1 : Principal focus of the lens]</p> <p><i>Ans. :</i></p>	

Qn. Nos.	Value Points	Total
	 <p data-bbox="363 656 1220 824"> ★ Ray diagram 2 ★ Position of the image : at $2F_2$ $\frac{1}{2}$ ★ Nature of the image : Real and inverted $\frac{1}{2}$ </p>	3
	<p data-bbox="767 891 820 920" style="text-align: center;">OR</p>  <p data-bbox="363 1328 1220 1507"> ★ Ray diagram 2 ★ Position of the image : between F_2 and $2F_2$ $\frac{1}{2}$ ★ Nature of the image : Real and inverted. $\frac{1}{2}$ </p>	3
<p data-bbox="252 1570 1230 1599">V. Answer the following question : $1 \times 4 = 4$</p> <p data-bbox="277 1659 1230 1912">12. a) A bread-toaster rated 350 W is used for 15 hours a day. An electric iron box rated 250 W is used for 5 hours a day. Calculate the cost of using these appliances for 30 days, if the cost of 1 kWh is Rs. 4.</p>		

Qn. Nos.	Value Points	Total
	<p>b) In which method the resistors R_1 and R_2 could be connected so that the equivalent resistance of that electric circuit becomes low ? What is the change in the value of current in the circuit by this type of connection ?</p> <p><i>Ans. :</i></p> <p>a) Solution :</p> <p>The energy consumed by the bread-toaster in 30 days</p> $= 350 \text{ W} \times 15 \text{ hours} \times 30 \text{ days} \quad \frac{1}{2}$ $= 157500 \text{ Wh}$ $= 157.5 \text{ kWh} \quad \frac{1}{2}$ <p>The energy consumed by the iron box in 30 days</p> $= 250 \text{ W} \times 5 \text{ hours} \times 30 \text{ days} \quad \frac{1}{2}$ $= 37500 \text{ Wh}$ $= 37.5 \text{ kWh} \quad \frac{1}{2}$ <p>The total cost of energy at the rate of Rs. 4.00 for 1 kWh for 30 days.</p> $= (157.5 + 37.5) \text{ kWh} \times 4 \quad \frac{1}{2}$ $= 195 \times 4$ $= \text{Rs. } 780 \quad \frac{1}{2}$	

Qn. Nos.	Value Points	Total
b)	Parallel connection	$\frac{1}{2}$
	The value of the current increases.	$\frac{1}{2}$
		4
VI.	Answer the following question :	1 × 5 = 5
13.	a) How does the lens of human eye accommodate to see the nearby objects and the distant objects ? Explain.	
	b) Explain the formation of rainbow in the nature.	
	<i>Ans. :</i>	
a)	★ When the ciliary muscles are relaxed the eye lens becomes thin	$\frac{1}{2}$
	★ This increases its focal length	$\frac{1}{2}$
	★ and the distant objects can be seen clearly	$\frac{1}{2}$
	★ When the ciliary muscles contract the eye lens becomes thick	$\frac{1}{2}$
	★ This decreases its focal length	$\frac{1}{2}$
	★ and the nearby objects can be seen clearly.	$\frac{1}{2}$
b)	★ The water droplets act like small prisms	$\frac{1}{2}$
	★ They refract and disperse the incident sunlight	$\frac{1}{2}$

Qn. Nos.	Value Points	Total
	<p>★ Then reflect internally</p> <p>★ Finally refract again while coming out of water droplets.</p> <p>Due to the dispersion of light in this manner the rainbow is formed.</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>5</p>

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S. S. L. C. EXAMINATION, JUNE — 2023

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 13. 06. 2023]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Chem.)**

Date : 13. 06. 2023]

CODE NO. : **83-E (Chem.)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / **Regular Repeater**)

(ರಸಾಯನ ವಿಜ್ಞಾನ / **Chemistry**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

[**Max. Marks : 80**

PART - B
(Chemistry)

Qn. Nos.	Value Points	Total
VII.	Multiple choice questions :	2 × 1 = 2
14.	Mendeleev's periodic table is constructed on the basis of (A) Atomic number (B) Electronic configuration of an atom (C) Atomic size (D) Atomic mass. Ans. : (D) Atomic mass	1

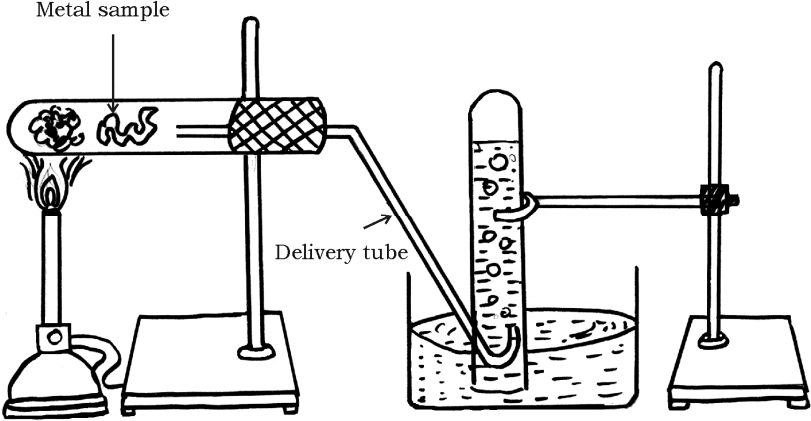
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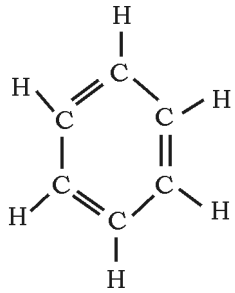
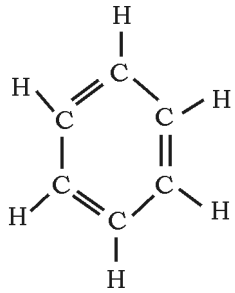
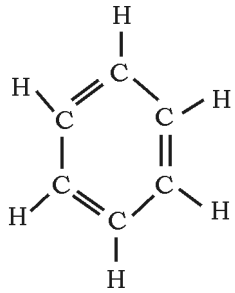
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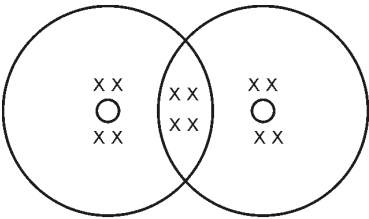
Qn. Nos.	Value Points	Total
15.	<p>Chips manufacturers, flush bags of chips with nitrogen gas because, to</p> <p>(A) prevent corrosion of chips</p> <p>(B) prevent chips from getting oxidised</p> <p>(C) make chips undergo rancidity</p> <p>(D) prevent the chips from getting reduced.</p> <p>Ans. :</p> <p>(B) prevent chips from getting oxidised</p>	1
VIII.	Answer the following questions :	4 × 1 = 4
16.	<p>Name the product produced when calcium oxide reacts with water.</p> <p>Ans. :</p> <p>★ Calcium hydroxide / slaked lime</p> <p style="text-align: center;">OR</p> <p>★ $\text{Ca}(\text{OH})_2$ (Credit $\frac{1}{2}$ mark for molecular formula)</p>	1
17.	<p>Name the ions responsible for acidic and basic natures of the substances.</p> <p>Ans. :</p> <p>★ Acidic — H^+ / H_3O^+ / Hydrogen / Hydronium</p> <p>★ Basic — OH^- Hydroxyl / Hydroxide</p>	$\frac{1}{2}$ $\frac{1}{2}$ 1
18.	<p>Why are detergents more suitable for cleansing clothes in hard water ?</p> <p>Ans. :</p> <p>Detergents do not form insoluble precipitates with calcium / magnesium ions present in hard water</p>	1

Qn. Nos.	Value Points	Total
19.	Ionic compounds have high melting point and boiling point. Why ? Ans. : Considerable amount / more amount of energy is required to break the strong inter ionic attraction between the molecules.	1
IX. Answer the following questions : 3 × 2 = 6		
20.	In a homologous series, the first member of hydrocarbon group has the molecular formula CH_4 . Then find out the molecular formula of the fourth member and write two types of structural formula of it. Ans. : ★ $\frac{\text{C}_1\text{H}_4}{\text{C}_2\text{H}_6}$ OR $\frac{\text{C}_1\text{H}_2}{\text{C}_3\text{H}_8}$ ★ $\frac{\text{C}_1\text{H}_2}{\text{C}_3\text{H}_8}$ ★ $\frac{\text{C}_1\text{H}_2}{\text{C}_4\text{H}_{10}}$	1
Butane (C_4H_{10}) structures		
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<i>n</i> -butane		$\frac{1}{2}$
$\begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & & & \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{H} & & \\ & & & & & & \\ & \text{H} & & \text{H} & & & \\ & & \text{H} - \text{C} - \text{H} & & & & \\ & & & & & & \\ & & \text{H} & & & & \end{array}$ OR $\begin{array}{ccccccc} & & & & \text{H} & & \\ & & & & & & \\ & & & & \text{C} - \text{H} & & \\ & & & & & & \\ & & & & \text{H} & & \\ & & & & / & & \\ & & & & \text{C} - \text{H} & & \\ & & & & & & \\ & & & & \text{H} & & \\ & & & & \backslash & & \\ & & & & \text{C} - \text{H} & & \\ & & & & & & \\ & & & & \text{H} & & \end{array}$		$\frac{1}{2}$
		2

Qn. Nos.	Value Points	Total
21.	<p>What are alloys ? Write the constituent elements present in bronze and solder metal.</p> <p style="text-align: center;">OR</p> <p>What are ores ? Name the respective methods used to convert sulphide and carbonate ores of metals into their oxides.</p> <p><i>Ans. :</i></p> <p>★ An alloy is a homogenous mixture of two or more metals or metals and non-metals. 1</p> <p>★ Bronze — Copper and tin / Cu and Sn $\frac{1}{2}$</p> <p>★ Solder metal — Lead and tin / Pb and Sn $\frac{1}{2}$</p> <p style="text-align: center;">OR</p> <p>★ Minerals contain a very high percentage of a particular metal and the metal can be profitably extracted from it. 1</p> <p>★ Metallic sulphide ore — Roasting $\frac{1}{2}$</p> <p>★ Metallic carbonate ore — Calcination $\frac{1}{2}$</p>	2
22.	<p>Add same amount of barium chloride solution to a test tube containing 5 ml of sodium sulphate solution. Then</p> <p>i) Which insoluble white precipitate is formed ?</p> <p>ii) Name the ions responsible for the formation of white precipitate.</p> <p>iii) Mention the type of chemical reaction that took place here.</p> <p><i>Ans. :</i></p> <p>i) BaSO_4 / barium sulphate $\frac{1}{2}$</p> <p>ii) SO_4^{2-} — sulphate radical $\frac{1}{2}$</p> <p>Ba^{2+} — Barium ion $\frac{1}{2}$</p> <p>iii) Double displacement reaction / precipitation reaction. $\frac{1}{2}$</p>	2

Qn. Nos.	Value Points	Total																		
<p>X.</p> <p>Answer the following questions : 3 × 3 = 9</p> <p>23. Draw the diagram of arrangement of the apparatus used to show the action of steam on metal. Label the following parts :</p> <p>i) Metal sample</p> <p>ii) Delivery tube.</p> <p><i>Ans. :</i></p> <div style="text-align: center;"> <p>Action of steam on metal</p>  </div> <p style="text-align: right;">Diagram — 2 Parts — $\frac{1}{2} + \frac{1}{2}$</p>		3																		
<p>24. The elements are arranged in the increasing order of their atomic masses in the below given table. Observe it and answer the following questions :</p> <table border="1" data-bbox="360 1489 1230 1610"> <tbody> <tr> <td>Sa</td> <td>Re</td> <td>Ga</td> <td>Ma</td> <td>Pa</td> <td>Dha</td> <td>Ni</td> <td></td> <td></td> </tr> <tr> <td>H</td> <td>Li</td> <td>Be</td> <td>B</td> <td>C</td> <td>N</td> <td>O</td> <td>F</td> <td>Na</td> </tr> </tbody> </table> <p>i) Name the elements that belong to the same group.</p> <p>ii) State the law that helps to group these elements.</p> <p>iii) Write two limitations of the same law.</p> <p><i>Ans. :</i></p> <p>i) H and F $\frac{1}{2}$</p> <p>Li and Na $\frac{1}{2}$</p>	Sa	Re	Ga	Ma	Pa	Dha	Ni			H	Li	Be	B	C	N	O	F	Na		
Sa	Re	Ga	Ma	Pa	Dha	Ni														
H	Li	Be	B	C	N	O	F	Na												

Qn. Nos.	Value Points	Total									
	ii) Newlands' law of octaves. When the elements arranged in the order of increasing atomic masses, every eighth element had properties similar to that of first. 1 iii) Limitations : ★ Applicable only up to calcium ★ Wrong guess made such as 'no more elements would be discovered in future'. ★ Adjusted two unsimilar elements in the same slot ★ With the discovery of noble gases the law of octaves become irrelevant. <div style="text-align: right;">(Any two points) $\frac{1}{2} + \frac{1}{2}$</div>	3									
25.	a) Identify unsaturated hydrocarbons in the following carbon compounds and write their structural formula. C_6H_6 , C_5H_{12} , C_2H_5OH , C_2H_2 . b) Write the difference between esterification and saponification. <p style="text-align: center;">OR</p> a) Write electron dot structure of oxygen molecule. b) Carbon atom does not form C^{4-} anion and C^{4+} cation. Why ? <i>Ans. :</i>										
a)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><i>Unsaturated hydrocarbons</i></td> <td style="width: 40%;"><i>Structural formula</i></td> <td style="width: 30%; text-align: right;">$\frac{1}{2} + \frac{1}{2}$</td> </tr> <tr> <td style="vertical-align: middle;">C_6H_6</td> <td style="text-align: center; vertical-align: middle;">  </td> <td></td> </tr> <tr> <td style="vertical-align: middle;">C_2H_2</td> <td style="text-align: center; vertical-align: middle;">$H - C \equiv C - H$</td> <td style="text-align: right; vertical-align: middle;">$\frac{1}{2} + \frac{1}{2}$</td> </tr> </table>	<i>Unsaturated hydrocarbons</i>	<i>Structural formula</i>	$\frac{1}{2} + \frac{1}{2}$	C_6H_6			C_2H_2	$H - C \equiv C - H$	$\frac{1}{2} + \frac{1}{2}$	
<i>Unsaturated hydrocarbons</i>	<i>Structural formula</i>	$\frac{1}{2} + \frac{1}{2}$									
C_6H_6											
C_2H_2	$H - C \equiv C - H$	$\frac{1}{2} + \frac{1}{2}$									

Qn. Nos.	Value Points	Total
b)	Esterification : Reaction between an acid and an alcohol to produce esters. $\frac{1}{2}$ Saponification : Reaction between an alkaline base and long chain carboxylic acid to produce soaps [or sodium / potassium salts of long chain carboxylic acid] $\frac{1}{2}$	3
a)	<p style="text-align: center;">OR</p>  <p style="text-align: center;">O = O</p>	1
b)	★ C ⁴⁻ anion does not form because difficult for the nucleus with six protons to hold on ten electrons. 1 ★ C ⁴⁺ cation does not form because require large amount of energy to remove four electrons leaving behind a carbon with six proton in its nucleus holding on just two electrons. 1	3
XI.	Answer the following question :	1 × 4 = 4
26.	a) Explain the manufacturing of bleaching powder. Write any two uses of it. b) A strong solution of sodium hydroxide is added to the strong solution of hydrochloric acid. What is the nature of the salt solution formed here ? Write a balanced chemical equation for this reaction.	

Qn. Nos.	Value Points	Total
	<p><i>Ans. :</i></p> <p>a) Bleaching powder is produced by the action of chlorine on dry slaked lime.</p> <p style="text-align: center;">OR</p> $\text{Ca (OH)}_2 + \text{Cl}_2 \rightarrow \text{CaOCl}_2 + \text{H}_2 \text{O}$ <p>Uses :</p> <ul style="list-style-type: none"> ★ For bleaching cotton and linen in the textile industry, wood pulp in paper factories. ★ For bleaching washed clothes in laundry ★ As an oxidising agent in chemical industry ★ to make drinking water free from germs. <p style="text-align: right;">(Any two)</p>	<p style="text-align: right;">1</p> <p style="text-align: right;">$\frac{1}{2} + \frac{1}{2}$</p>
b)	<ul style="list-style-type: none"> ★ The salt solution is a neutral solution. ★ $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2 \text{O}$. 	<p style="text-align: right;">1</p> <p style="text-align: right;">1</p> <p style="text-align: right;">4</p>

CCE RR
UNREVISED FULL SYLLABUS

A

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD,
MALLESHWARAM, BENGALURU - 560 003

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಜೂನ್ — 2023

S. S. L. C. EXAMINATION, JUNE — 2023

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 13. 06. 2023]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 13. 06. 2023]

CODE NO. : **83-E (Bio)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / **Regular Repeater**)

(ಜೀವ ವಿಜ್ಞಾನ / **Biology**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

[**Max. Marks : 80**

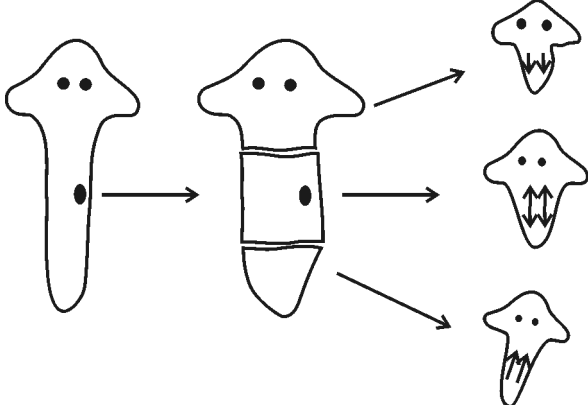
PART - C

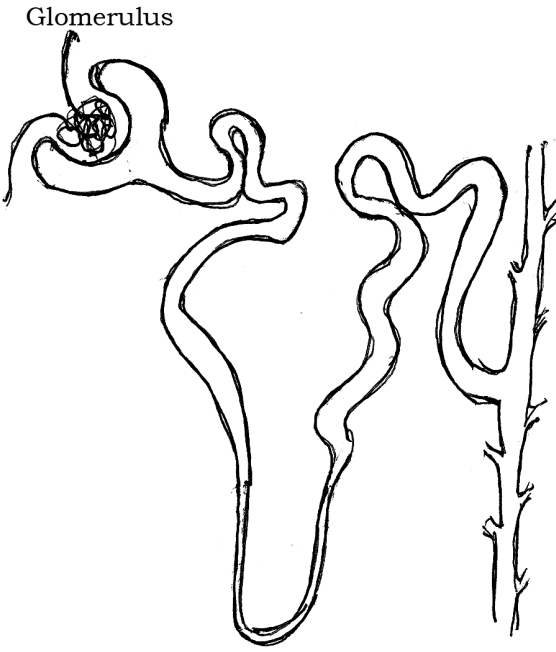
(**Biology**)

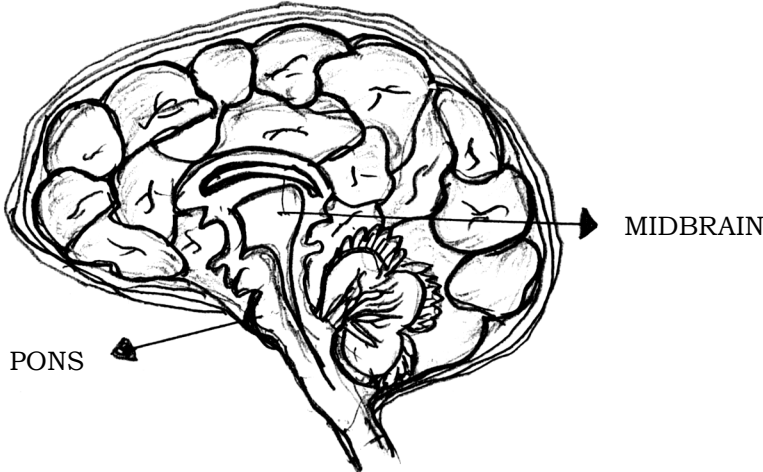
Qn. Nos.	Value Points	Total
XII.	Multiple choice questions :	2 × 1 = 2
27.	Producers of aquatic eco-system are (A) algae (B) small fishes (C) larvae (D) protozoa. Ans. : (A) algae	1

RR-A (MA)-BIO

[Turn over

Qn. Nos.	Value Points	Total
28.	<p>Biological process that has been shown in the diagram is</p>  <p>(A) production of progenies by fragmentation method (B) production of progenies by multiple fission method (C) regeneration of tissues by development in specialised cells (D) asexual reproduction by vegetative propagation.</p> <p>Ans. : (C) regeneration of tissues by development in specialised cells</p>	1
XIII.	Answer the following questions :	2 × 1 = 2
29.	<p>What is biological magnification ?</p> <p>Ans. : The process of increasing the storage of harmful chemicals in the organisms that found in trophic levels of various food chains.</p>	1
30.	<p>Mention the two importances of 'Recycling' in controlling environmental pollution.</p> <p>Ans. :</p> <ul style="list-style-type: none"> ★ Helps in the segregation of bio-degradable and non-bio degradable materials ★ The materials that can be recycled are not dumped as other waste materials ★ Decrease the use of raw materials ★ Addition of harmful wastes to other natural resources will be avoided. <p>(Any two) $\frac{1}{2} + \frac{1}{2}$</p>	1

Qn. Nos.	Value Points	Total
XIV.	Answer the following questions :	3 × 2 = 6
31.	<p>What needs of the local people are fulfilled by the forest ?</p> <p><i>Ans. :</i></p> <p>Local people obtain :</p> <ul style="list-style-type: none"> ★ Large quantities of firewood, small timber and grass. ★ Bamboo to make slats for huts and baskets for collecting and storing food materials. ★ Essential materials to prepare the implements for agriculture, fishing and hunting. ★ Fruits, nuts and medicines. ★ Grazing area for their cattle. <p style="text-align: right;">(Any four)</p>	<p style="text-align: right;">$4 \times \frac{1}{2}$</p> <p style="text-align: right;">2</p>
32.	<p>Draw the diagram showing the structure of nephron and label 'glomerulus'.</p> <p><i>Ans. :</i></p> <div style="text-align: center;">  </div>	
	<p style="text-align: center;">Structure of nephron</p> <p style="text-align: right;">Figure — $1 \frac{1}{2}$</p> <p style="text-align: right;">Part — $\frac{1}{2}$</p>	<p style="text-align: right;">2</p>

Qn. Nos.	Value Points	Total
33.	<p>Student 'A' tells to Student 'B' that the wing of bird and arm of human are analogous organs. Student 'B' replies both of them are homologous organs. Whose answer is correct ? Justify your answer with suitable reasons.</p> <p><i>Ans. :</i></p> <p>Student B's answer is correct. $\frac{1}{2}$</p> <p>Because,</p> <ul style="list-style-type: none"> ★ they might be evolved from a common ancestor $\frac{1}{2}$ ★ the basic structure of wing and arm is similar $\frac{1}{2}$ ★ they perform different functions $\frac{1}{2}$ 	2
XV. Answer the following questions : 3 × 3 = 9		
34.	<p>Draw the diagram showing the structure of human brain and label the following parts :</p> <p>i) Mid-brain</p> <p>ii) Pons</p> <p><i>Ans. :</i></p> <div style="text-align: center;">  </div> <p style="text-align: right;">Diagram — 2 Part — $\frac{1}{2} + \frac{1}{2}$</p>	3
35.	<p>Round, green colour seeds producing pea plant ($RR yy$) are crossed with wrinkled, yellow colour seeds producing pea plant ($rr YY$). Show the result of F_2 generation with the</p>	

Qn. Nos.	Value Points	Total																									
	<p>help of a checker board and mention the ratio of varieties of plants.</p> <p style="text-align: center;">OR</p> <p>How are the traits of organisms classified as 'dominant' and 'recessive' traits ? The experiences of an individual acquired during its life-time cannot be passed on to its progeny. Why ?</p> <p>Ans. :</p> <p>F_2 $RrYy \times RrYy$</p> <table border="1" data-bbox="395 786 1161 1070"> <tbody> <tr> <td></td> <td><i>RY</i></td> <td><i>Ry</i></td> <td><i>rY</i></td> <td><i>ry</i></td> </tr> <tr> <td><i>RY</i></td> <td><i>RRYY</i></td> <td><i>RRYy</i></td> <td><i>RrYY</i></td> <td><i>RrYy</i></td> </tr> <tr> <td><i>Ry</i></td> <td><i>RRYy</i></td> <td><i>RRyy</i></td> <td><i>RrYy</i></td> <td><i>Rryy</i></td> </tr> <tr> <td><i>rY</i></td> <td><i>RrYY</i></td> <td><i>RrYy</i></td> <td><i>rrYY</i></td> <td><i>rrYy</i></td> </tr> <tr> <td><i>ry</i></td> <td><i>RrYy</i></td> <td><i>Rryy</i></td> <td><i>rrYy</i></td> <td><i>rryy</i></td> </tr> </tbody> </table> <p>Round, yellow = 9 Round, green = 3 Wrinkled, yellow = 3 Wrinkled, green = 1</p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ★ Among the two copies of genes related for a trait, if one of the traits expressed in many generations / offsprings, then that trait is dominant. 1 ★ Among paired traits which of the traits not expressed or less expressed in a few of the generations / organisms, then that trait is recessive. 1 ★ Change in non-reproductive tissues cannot be passed on to the DNA of germ cells. 1 		<i>RY</i>	<i>Ry</i>	<i>rY</i>	<i>ry</i>	<i>RY</i>	<i>RRYY</i>	<i>RRYy</i>	<i>RrYY</i>	<i>RrYy</i>	<i>Ry</i>	<i>RRYy</i>	<i>RRyy</i>	<i>RrYy</i>	<i>Rryy</i>	<i>rY</i>	<i>RrYY</i>	<i>RrYy</i>	<i>rrYY</i>	<i>rrYy</i>	<i>ry</i>	<i>RrYy</i>	<i>Rryy</i>	<i>rrYy</i>	<i>rryy</i>	<p style="text-align: right;">2</p> <p style="text-align: right;">1</p> <p style="text-align: right;">3</p> <p style="text-align: right;">3</p>
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36.	<p>“Reaching to sexual maturation is an essential event with respect to mammals like humans.” Substantiate this statement.</p> <p>Ans. :</p>																										

Qn. Nos.	Value Points	Total
	<p>Reaching sexual maturation.</p> <p>In males</p> <ul style="list-style-type: none"> ★ Development of testes helps to produce sperm / testosterone ★ For reproduction requires development of testes ★ To have secondary sexual characters. ★ During intercourse erection of penis helps to transfer germ cells into the female body. <p>In females</p> <ul style="list-style-type: none"> ★ To cause menstrual cycle ★ For the production and release of ovum ★ For the secretion of women related hormones like estrogen ★ For the growth of breasts to feed the baby after a child birth. 	3
	<p>XVI. Answer the following questions : 2 × 4 = 8</p>	
37.	<p>a) As the growth advances in a climbing plant (creeper) that appears as the plant is moving towards a particular direction. How ?</p> <p>b) Explain the necessity of chemical communication in animals.</p> <p><i>Ans. :</i></p> <p>a) For a touch / thigmotropism, when the tendrils of creeper plants come in contact with a support, the plant circles around it and grows faster. 1</p> <p>When tendrils gets attached to a support then, tips of the plant synthesise auxin hormone at higher concentration and stimulates the elongation of cells, then the plant shows directional movement / growth towards light. 1</p> <p>b) In animals chemical communication is necessary.</p> <ul style="list-style-type: none"> ★ In animals electrical impulses will reach only the cells that are connected by nervous tissue but not each and every cell. 1 	

Qn. Nos.	Value Points	Total										
38.	<p>★ Nerve cells cannot create and transmit electrical impulses continuously therefore, chemical communication is necessary in transmitting stimulus continuously to each and every cell. 1</p> <p>a) Compare the functions of xylem tissue with that of phloem tissue.</p> <p>b) Explain the process of exchange of gases that take place through stomata in plants.</p> <p style="text-align: center;">OR</p> <p>a) How is the structure of human heart supportive in transporting oxygenated blood and deoxygenated blood ? Explain.</p> <p>b) In humans, how is the digested food absorbed by the blood ? Mention the function of blood in transporting necessary materials.</p> <p>Ans. :</p> <table border="1" data-bbox="352 1216 1225 1906"> <thead> <tr> <th data-bbox="352 1216 791 1272"><i>Xylem</i></th> <th data-bbox="791 1216 1225 1272"><i>Phloem</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="352 1272 791 1429">★ Transport water and minerals / inorganic materials</td> <td data-bbox="791 1272 1225 1429">★ Transport food / organic materials</td> </tr> <tr> <td data-bbox="352 1429 791 1585">★ Flow of materials is unidirectional</td> <td data-bbox="791 1429 1225 1585">★ Flow of materials is in two directions (upward and downward)</td> </tr> <tr> <td data-bbox="352 1585 791 1798">★ Xylem tracheids and vessels transport materials from root to shoot</td> <td data-bbox="791 1585 1225 1798">★ Sieve tube and companion cells transport materials to all the parts from leaves</td> </tr> <tr> <td data-bbox="352 1798 791 1906">★ Works by suction pressure</td> <td data-bbox="791 1798 1225 1906">★ Works by osmotic pressure</td> </tr> </tbody> </table> <p style="text-align: center;">(Any three) 1 + 1 + 1</p>	<i>Xylem</i>	<i>Phloem</i>	★ Transport water and minerals / inorganic materials	★ Transport food / organic materials	★ Flow of materials is unidirectional	★ Flow of materials is in two directions (upward and downward)	★ Xylem tracheids and vessels transport materials from root to shoot	★ Sieve tube and companion cells transport materials to all the parts from leaves	★ Works by suction pressure	★ Works by osmotic pressure	4
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Qn. Nos.	Value Points	Total
b)	★ In plants the large intercellular spaces and all the cells are oftenly in contact with air, due to this CO ₂ and oxygen are exchanged by diffusion here. This means $\frac{1}{2}$ ★ Gases can go into cells and away from them and out into the air / atmosphere. $\frac{1}{2}$	4
OR		
a)	Human heart ★ Has different chambers $\frac{1}{2}$ ★ The valves present in between the chambers prevent backward flow of blood $\frac{1}{2}$ ★ Separated by dividing wall septum $\frac{1}{2}$ ★ Septum is responsible for creating separate pathways to transport oxygenated and deoxygenerated blood. $\frac{1}{2}$	
b)	Absorbed by finger like projections Villi present in small intestine $\frac{1}{2}$ ★ Blood plasma — transports food, carbon dioxide and nitrogne wastes $\frac{1}{2}$ ★ RBC — Carries oxygen $\frac{1}{2}$ ★ Many other substances like salts are also transported by blood. $\frac{1}{2}$	4