CCE PF
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NSR & NSPR

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

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESHWARAM, BANGALORE – 560 003

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಮಾರ್ಚ್ / ಏಪ್ರಿಲ್ — 2022

S. S. L. C. EXAMINATION, MARCH/APRIL, 2022

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 11. 04. 2022] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 11. 04. 2022] **CODE NO. : 83-E (Bio)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

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

(ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / ಎನ್.ಎಸ್.ಆರ್. & ಎನ್.ಎಸ್.ಪಿ.ಆರ್.)

(Private Fresh & Private Repeater / NSR & NSPR)

(ಜೀವಶಾಸ್ತ್ರ / Biology)

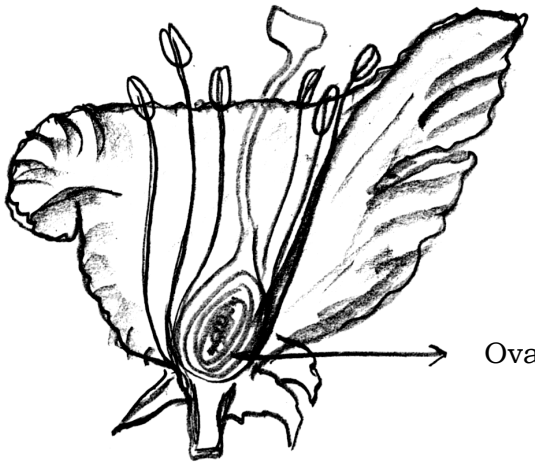
(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / English Medium)

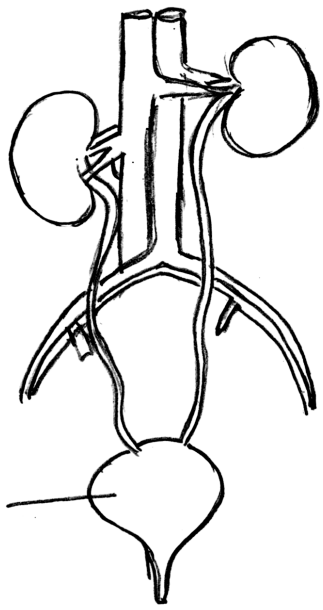
[ಗರಿಷ್ಠ ಅಂಕಗಳು : **100**

[Max. Marks : 100

Qn. Nos.	Value Points	Total
	PART - C	
	(BIOLOGY)	
XII.	Multiple choice : $2 \times 1 = 2$	
33.	Atmospheric layer that absorbs ultraviolet radiations coming from the sunlight is made up of this molecule, (A) N_2 (B) H_2 (C) O_3 (D) O_2. *Ans.* : (C) O_3	1

Qn. Nos.	Value Points	Total
34.	In humans, sexually transmitted viral infection is (A) AIDS (B) Syphilis (C) Tuberculosis (D) Gonorrhoea. *Ans.* : (A) AIDS	1
XIII.	Answer the following questions : $2 \times 1 = 2$	
35.	What is the role of decomposers in an ecosystem ? *Ans.* : Decompose dead wastes (organic) of plants and animals thus keep surroundings clean and maintain ecological balance. (Any other suitable answer)	1
36.	In males, testes are located outside the abdominal cavity in scrotum. Why ? *Ans.* : Because to maintain lower temperature required for the formation of sperms than the normal body temperature.	1
XIV.	Answer the following questions : $7 \times 2 = 14$	
37.	Mention the function of the following plant hormones : i) Auxin ii) Cytokinin. *Ans.* : i) Auxin : Helps the cells in the stems and the cells in the many parts of the plant body to grow longer. (Any suitable answer) 1 ii) Cytokinin : ★ Promotes cell division in fruits and seeds ★ Helps in promoting overall growth of plants. (Any *one*) 1	2
38.	Draw the diagram showing the longitudinal section of a flower and label 'ovary'.	

Qn. Nos.	Value Points	Total
	Ans. :  Longitudinal section of flower Diagram — $1\frac{1}{2}$ Labelling — $\frac{1}{2}$	2
39.	Give reason : a) 'Ventricles of the human heart have thick wall.' b) 'It is necessary to separate oxygenated and deoxygenated blood in mammals and birds.' *Ans.* : a) Since ventricles have to pump blood into various organs. 1 b) Since they need more energy to maintain their body temperature constant. 1	2
40.	What is dihybrid cross ? Write the ratio of the plants obtained in the F_2 generation in Mendel's dihybridisation experiment. *Ans.* : Crossing between two plants of same species with two different characteristics. 1 Ratio 9 : 3 : 3 : 1. 1	2
41.	Define the following related to movement due to growth in plants : i) Phototropism ii) Geotropism.	

Qn. Nos.	Value Points	Total
	Ans. : i) Shoots of the plants grow towards light. 1 ii) The downward growth of roots in response to the pull of earth or gravity. 1	2
42.	What is the function of ovary and fallopian tube in human female reproductive system ? *Ans.* : *Ovary* : ★ Helps in production of eggs / secretes some hormones. 1 *Fallopian tube* : ★ Egg is carried from ovary to womb OR ★ Site of Fertilization of gametes. 1	2
43.	Draw the diagram showing the structure of human excretory system and label 'urinary bladder'. *Ans.* :  Excretory system in human beings Diagram — $1\frac{1}{2}$ Labelling — $\frac{1}{2}$	2

Qn. Nos.	Value Points	Total
XV.	Answer the following questions : $3 \times 3 = 9$	
44.	When a tall (*TT*) pea plant is crossed with a dwarf (*tt*) pea plant, represent the result obtained in F_2 generation of monohybrid cross with the help of checker board and mention the ratio of varieties of plants.	
	Ans. :	

Gametes	*T*	*t*
T	*TT*	*Tt*
t	*Tt*	*tt*

2

Ratio

TT : *Tt* : *tt*

1 : 2 : 1 — 1

OR

Tall : Dwarf

3 : 1 — 3

45.	What is trophic level ? Flow of energy in an ecosystem is always unidirectional. Why ? Explain.	
	Ans. :	
	Different levels / stages of food chain. $\frac{1}{2}$	
	Because, $\frac{1}{2}$	
	★ The energy that is captured by autotrophs does not revert back to the solar input. $\frac{1}{2}$	
	★ The energy which passes to the herbivores do not come back to autotrophs. $\frac{1}{2}$	
	★ As energy moves progressively through the various trophic levels it is no longer available to the previous level. $\frac{1}{2}$	
	★ At different levels energy is lost in the form of heat. $\frac{1}{2}$	3
46.	a) Mention any four main factors that lead to the rise of new species.	
	b) The experiences of an individual acquired during its lifetime cannot be passed on to its progeny. Give reason.	
	OR	

Qn. Nos.	Value Points	Total
	What are fossils ? Mention the methods of estimation of dating fossils and explain briefly.	
	Ans. :	
	a) Factors responsible for the rise of new species :	
	★ Geographical isolation	
	★ Natural selection	
	★ Inheritance of traits	
	★ Genetic drift / gene flow	
	★ Variation / mutuation / changes in DNA.	
	(Any *four*) $4 \times \frac{1}{2} = 2$	
	b) Change in non-reproductive tissues cannot be passed on to the DNA of germ cells. 1	3
	OR	
	Preserved traces of living organisms in deep layers of the earth. 1	
	Methods :	
	i) Relative method : The fossils we find closer to the surface are more recent than fossils we find in deeper layers. 1	
	ii) Determining the time period by using isotopes (dating)	
	Detecting the ratios of different isotopes of same element in the fossil material. 1	3
XVI.	Answer the following questions : $2 \times 4 = 8$	
47.	Which molecule is formed during the first step of cellular respiration by the breakdown of glucose molecule in cytoplasm ? Mention the types of respiration and write any two differences between them.	
	OR	
	Which are the factors essential for photosynthesis ? Mention the events that occur during this process and represent this process by balanced chemical equation.	

Qn. Nos.	Value Points	Total

Ans. :

Pyruvate. 1

Two types :

i) Aerobic respiration $\frac{1}{2}$

ii) Anaerobic respiration. $\frac{1}{2}$

Aerobic respiration	*Anaerobic respiration*
★ Atmospheric oxygen is utilised	★ Atmospheric oxygen is not utilised
★ Liberates more energy with carbon dioxide and water	★ Liberates less energy with ethanol and carbon dioxide
★ Takes place in mitochondria	★ Takes place in cytoplasm
★ Takes place in higher levels of organisms	★ Takes place in lower organisms like yeast.

(Any *two*) 1 + 1 4

OR

Factors essential for photosynthesis :

Carbon dioxide, water, minerals, sunlight and chlorophyll. 1

Events that occur during photosynthesis :

i) Absorption of light energy by chlorophyll. $\frac{1}{2}$

ii) Conversion of light energy into chemical energy. $\frac{1}{2}$

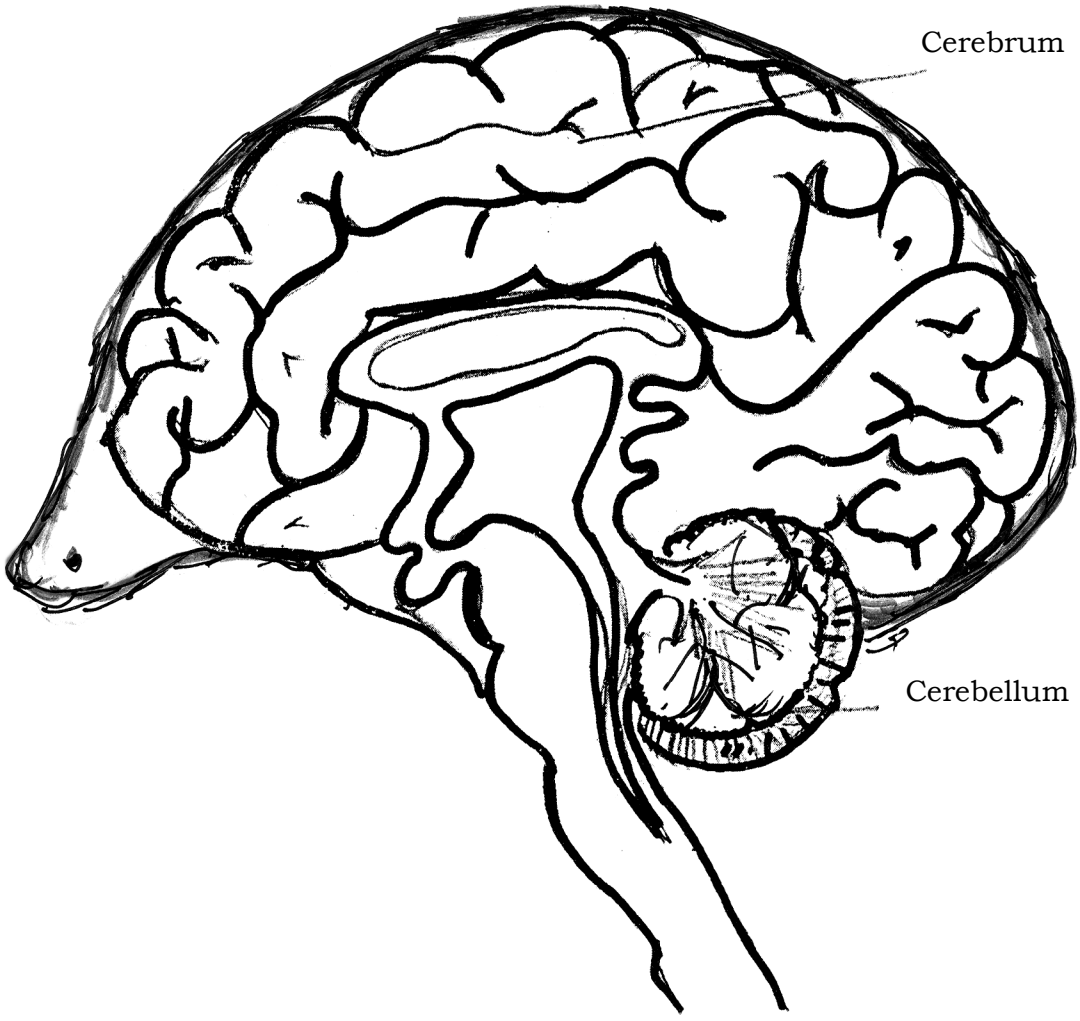
iii) Splitting of water molecules into hydrogen and oxygen molecules. $\frac{1}{2}$

iv) Reduction of carbon dioxide into carbohydrates. $\frac{1}{2}$

Equation :

$$6CO_2 + 12H_2O \xrightarrow[\textit{Chlorophyll}]{\text{Sunlight}} \underset{\textit{Glucose}}{C_6H_{12}O_6} + 6O_2 + 6H_2O$$ 1

4

Qn. Nos.	Value Points	Total
48.	Draw the diagram showing the structure of the human brain and label the following parts : i) Cerebrum ii) Cerebellum. *Ans.* :  Human Brain For diagram — 3 For labelling — $\frac{1}{2}+\frac{1}{2}$	4