CCE PF
CCE PR

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

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

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷೆ, ಮಾರ್ಚ್ / ಏಪ್ರಿಲ್ — 2017

S. S. L. C. EXAMINATION, MARCH/APRIL, 2017

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 07. 04. 2017]

Date : 07. 04. 2017]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

CODE NO. : 83-E (Bio)

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / Biology)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ + ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Fresh + Private Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **100**

[Max. Marks : 100

Qn. Nos.	Value Points	Total
3.	Use of detergents is hazardous to the aquatic life because, they *Ans.* : (A) — reduce the amount of dissolved oxygen content in water.	1
6.	A student finds a flower in his school campus and decides that it is the flower of a monocot plant. The reason for his conclusion is *Ans.* : (C) — petals are in multiples of three.	1
8.	These diseases can be controlled by eradicating mosquitoes. *Ans.* : (D) — Chikungunya, Dengue fever.	1
10.	A special property of DNA that ensures the equal distribution of similar genetic material to the offsprings is *Ans.* : (C) — replication	1

Qn. Nos.	Value Points	Total
14.	A palaeontologist observes the jaw of an animal and concludes that it belongs to mammals. Give reason for his conclusion. *Ans.* : Teeth are of different types (heterodont) embedded in sockets in jaw bones (thecodont)	1
17.	Mention the function of sympathetic and parasympathetic nervous system with respect to the pupil of eye. *Ans.* : Sympathetic nervous system stimulates the dilation of pupil of the eye and parasympathetic nervous system constricts the pupil of the eye. $\frac{1}{2}+\frac{1}{2}$	1
21.	The percentage of air pollution from different sources are given in the table. With the help of this, answer the following questions :	

Sources of air pollution	*Industry*	*Transportation*	*Consumer & Commercial products*	*Commercial & Residential heating*	*Agriculture*	*Other*
Percentage	52%	27%	8%	1%	10%	2%

(a) Which are the two sources to be monitored more to control air pollution ?

(b) Mention the preventive measure for each one of these two sources to control air pollution.

Ans. :

a) i) Industry $\frac{1}{2}$

ii) Transportation. $\frac{1}{2}$

b) *Industry* :

i) Emission from industries to be checked and controlled.

ii) Industries to be established away from towns and cities.

iii) Regulatory rules related to air pollution must be strictly enforced. (any *one*) $\frac{1}{2}$

Transportation :

i) Automobiles to be checked periodically.

ii) Improving the efficiency of engines.

iii) Use of unleaded petrol and biofuels.

iv) Public transport system has to be used. (any *one*) $\frac{1}{2}$

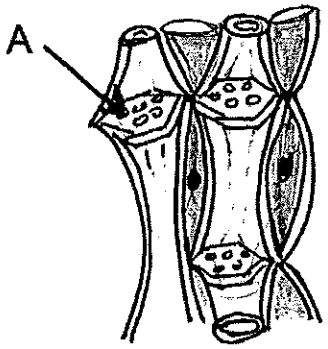
(Any other suitable answer) 2

Qn. Nos.	Value Points	Total
24.	Write the differences between tendons and ligaments. *Ans.* :	

Tendons	*Ligaments*
i) Attach the muscles to the bones or cartilage	i) Connect one bone to another
ii) They contain more white fibres (collagen fibres)	ii) They contain more elastic fibres

2

27. The figure of longitudinal section of a plant tissue is given below. Name the part labelled as '*A*' and mention its function. Name the other components of this tissue.



Ans. :

★ *A* → Sieve plate / pores of sieve plate. $\frac{1}{2}$

★ Function : Conduction of food. $\frac{1}{2}$

★ Other components :

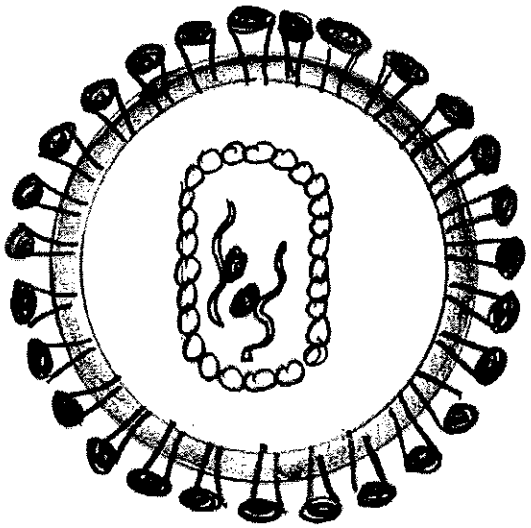
i) Companion cells

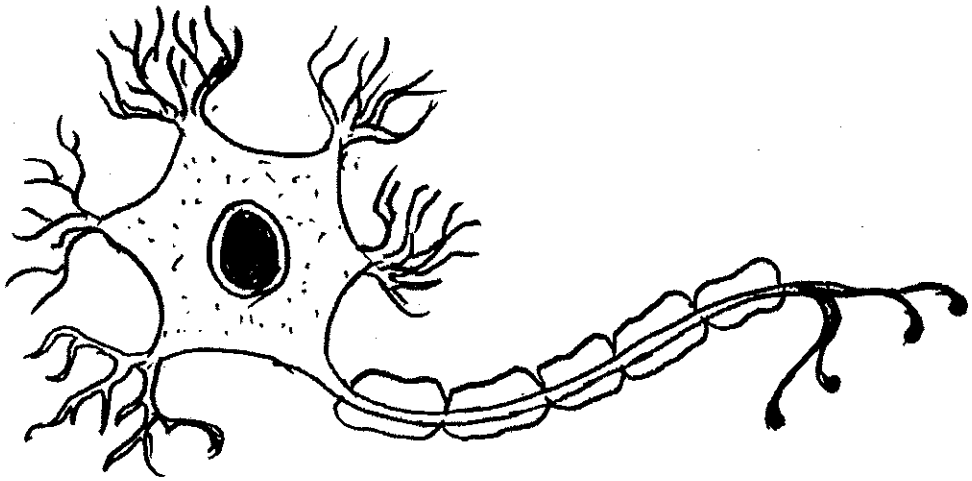
ii) Phloem fibre

iii) Phloem parenchyma.

iv) Sieve tube. (Any *two*) $2 \times \frac{1}{2}$

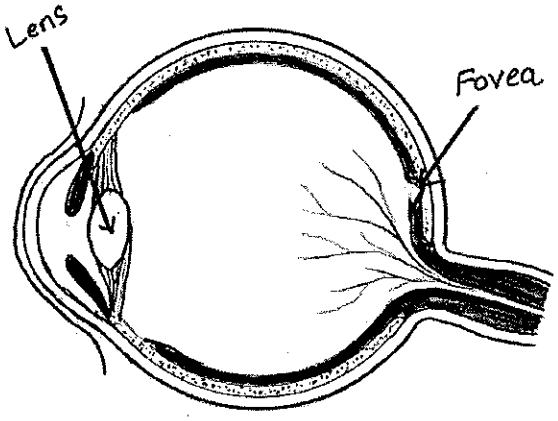
2

Qn. Nos.	Value Points	Total
30.	Draw the diagram showing the structure of HIV. *Ans.* : 	2
32.	What are polyploids ? Write their limitations. **OR** Mention the advantages of using antioxidants and colourants in food processing. *Ans.* : Plants with multiple sets of chromosomes are called polyploids. 1 Limitations : Fertility is lower and growth is very slow. $\frac{1}{2}+\frac{1}{2}$ OR i) Antioxidants are substances which prevent food containing fat or oil from developing a foul smell. ii) Colourants are substances which restore colour lost during processing of food. 1 + 1	2 2

Qn. Nos.	Value Points	Total
34.	What are the physical changes that resulted in the upright posture in the course of evolution of human ? **OR** Write any four physical features of Australopithecus man. *Ans.* : i) Developed stronger and straighter legs with feet suited more for walking. ii) They started using their hands for grasping and for various purposes. iii) Changes in the pelvic girdle and associated muscles. iv) The pelvic girdle changed into a broad basin-like structure to support the trunk. v) The hole in the skull through which brain comes out, got shifted to the lower surface. (Any *four*) $4 \times \frac{1}{2}$ OR i) They are relatively short, about four and half feet in height. ii) Forehead was low. iii) Walked erect. iv) The brain capacity was equal to the much taller modern gorilla. v) The cranial capacity was only about one-third of modern man. (Any *four*) $4 \times \frac{1}{2}$	2 2
37.	Draw the diagram showing the structure of nerve cell (neuron). *Ans.* : 	2

Qn. Nos.	Value Points	Total
40.	What is thermal pollution ? Mention the controlling measure of thermal pollution. *Ans.* : ★ Releasing hot effluents to the water bodies is called thermal pollution. 1 ★ Hot effluents must be cooled to room temperature before being released. 1	2
43.	Mention the preventive measures of Bird Flu. *Ans.* : i) Travellers should avoid visits to bird markets of infected areas. ii) People who work with birds should use protective clothing and special breathing masks. iii) Partially cooked and uncooked meat should be avoided. (any *two*)	2
44.	Mention the problems of abnormal secretion of growth hormone prior to sexual maturity. *Ans.* : i) When growth hormone is secreted in excess prior to sexual maturity, the growth will be very high and leads to gigantism. 1 ii) When it is secreted in less quantity, it leads to dwarfism. 1	2
47.	(a) Mention any four flight adaptations in birds. (b) Name the two major groups of fishes based on the composition of endoskeleton. *Ans.* : a) i) Streamlined boat shaped body ii) Forelimbs modified into wings for flying iii) Special arrangements of feathers on wings to provide the lift iv) Presence of flight muscles v) Reduced body weight	

Qn. Nos.	Value Points	Total
	vi) Long bones are pneumatic, filled with air vii) Many bones in the body are fused viii) Absence of teeth, replaced by beak ix) Lungs are supported by air sacs for storing additional air. (Any *four*) $4 \times \frac{1}{2}$	
	b) i) Cartilaginous fishes $\frac{1}{2}$ ii) Bony fishes. $\frac{1}{2}$	3
49.	Explain the double helix structure of DNA molecule. **OR** Explain the Carl Correns's monohybrid cross in Four O'clock plant with the help of schematic representation. Mention the phenotype ratio and genotype ratio of plants occurred in F_2 generation. *Ans.* : i) The structure of DNA molecule resembles a spirally twisted ladder. $\frac{1}{2}$ ii) A pair of polynucleotide chains are helically coiled and antiparallel to each other. $\frac{1}{2}$ iii) Each nucleotide unit contains — Deoxyribose sugar, phosphate and nitrogenous base. $\frac{1}{2}$ iv) Each strand of the ladder is made up of pentose sugar and phosphate arranged alternatively. $\frac{1}{2}$ v) The nitrogen bases connect the two opposite strands like the rungs of a ladder. $\frac{1}{2}$ vi) There are two types of nitrogenous bases namely purines and pyrimidines. Always Adenine pairs with Thymine and Guanine pairs with Cytosine. $\frac{1}{2}$ OR	3

Qn. Nos.	Value Points	Total
	Factor for the red colour of the flower = *R* Factor for the white colour of the flower = *W* Parental generation : Pure red flower plant (RR) and pure white flower plant (WW) : Gametes : *R* and *W* Cross pollination *R W* — 1 F_1 generation ⟶ (all plants with pink flowers) Self pollination F_2 generation *RR RW RW WW* (1 red, 2 pink, 1 white flowered plants) — 1 OR (1 mark can be awarded if cheker board is written for F_2 generation) Phenotype ratio = 1 : 2 : 1 — $\frac{1}{2}$ Genotype ratio = 1 : 2 : 1 — $\frac{1}{2}$	3
52.	Draw the vertical section of the human eye and label the following parts : (a) Lens (b) Fovea. *Ans.* :  For diagram — 3 For each correct part — 2 × $\frac{1}{2}$	4