CCE RR

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

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

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S. S. L. C. EXAMINATION, JUNE, 2017

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 21. 06. 2017] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 21. 06. 2017] **CODE NO. : 83-E (Bio)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / **Biology**)

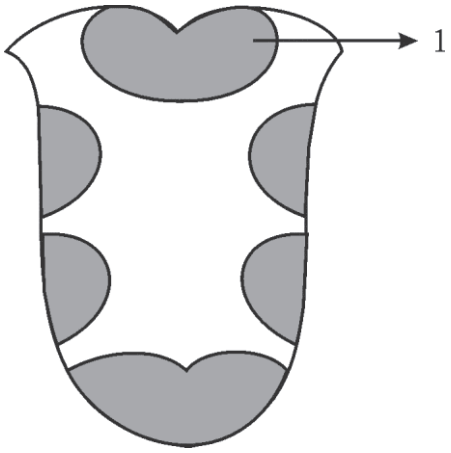
(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : 80

[Max. Marks : 80

Qn. Nos.	Value Points	Total
3.	The distribution of taste buds in the human tongue is shown in this figure. The part labelled as '1', senses this taste.  *Ans.* : (B) Bitter	1

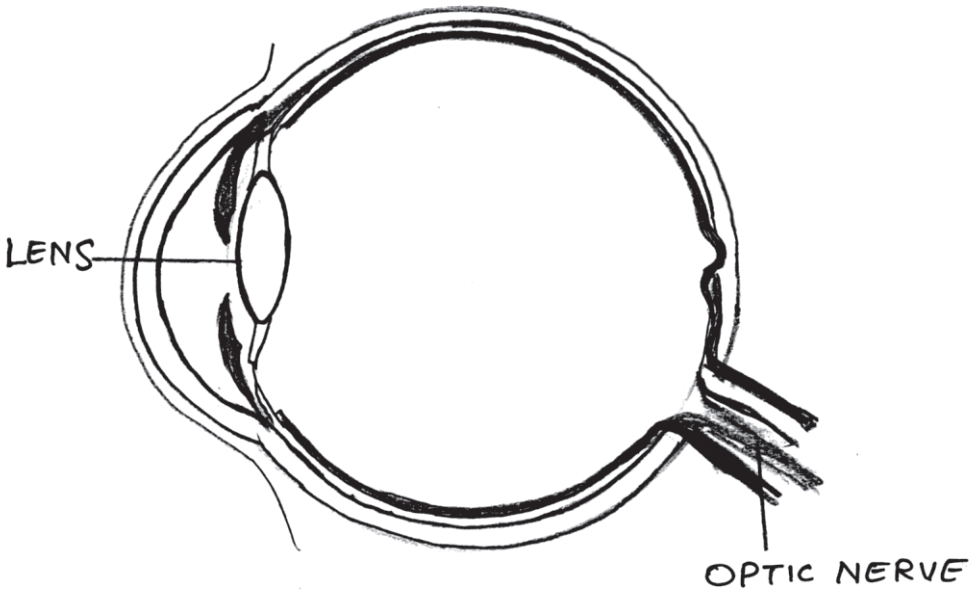
Qn. Nos.	Value Points	Total
5	When Mendel crossed pure varieties of a tall plant with red flowers and a dwarf plant with white flowers, the number of dwarf plants with white flowers obtained in F_1 generation is *Ans.* : (A) 0	1
7.	If the number of blood cells present in 1 mm^3 blood of a healthy person is written in the increasing order, then the correct order obtained is *Ans.* : (D) White blood cells, platelets, red blood cells	1
9.	The disease Syphilis is caused by the bacterium *Ans.* : (C) *Treponema pallidum*	1
12.	Effluents coming from furnaces of the industries must be cooled to atmospheric temperature before releasing into water bodies. Why ? *Ans.* : To prevent the death of aquatic life due to the thermal shock. *OR* To prevent thermal pollution.	1
15.	Moss plants do not grow to greater heights. Why ? *Ans.* : Due to the absence of vascular tissues (or) due to the absence of xylem and phloem tissues).	1
19.	Explain the structure of male and female cones of gymnosperms. *Ans.* : ★ Male cones contain microsporophylls. $\frac{1}{2}$ ★ These produce microspores that have male gametes. $\frac{1}{2}$ ★ Female cones contain megasporophylls. $\frac{1}{2}$ ★ These produce female gametes. $\frac{1}{2}$	2
20.	List any four characteristic features of fishes. *OR* List any four characteristic features of reptiles.	

Qn. Nos.	Value Points	Total
	Ans. : ★ The streamlined body has an exoskeleton composed of dermal scales. $\frac{1}{2}$ ★ Locomotor structures are in the form of paired and unpaired fins. $\frac{1}{2}$ ★ Gills are the respiratory organs. $\frac{1}{2}$ ★ Heart is two chambered with one auricle and one ventricle. $\frac{1}{2}$ ★ Nervous system has a brain, a spinal cord and ten pairs of cranial nerves. ★ Oviparous. Both fertilization and development are external. ★ Cold blooded animals. ★ Body is divisible into head, trunk and short tail. (any *four*) *OR* *Ans.* : ★ The exoskeleton is in the form of epidermal scales, forming distinct plates. $\frac{1}{2}$ ★ Locomotor structures are in the form of a pair of forelimbs and a pair of hindlimbs, containing five digits each. $\frac{1}{2}$ ★ Respiratory organs are a pair of lungs. $\frac{1}{2}$ ★ Heart is three chambered. $\frac{1}{2}$ ★ Nervous system has a brain, a spinal cord and twelve pairs of cranial nerves. ★ Oviparous. Fertilization is internal but development is external. ★ Cold blooded animals. ★ Body is divisible into head, trunk and short tail. (any *four*)	2 2
23.	"In agriculture, growing genetically modified plants can reduce the water pollution caused by agricultural wastes." Justify this statement. *Ans.* : Genetically modified plants have the ability to resist / destroy insects (or pest resistant). 1 This reduces the use of insecticides. This reduces their flow into water bodies. 1 (any other suitable answer)	2

Qn. Nos.	Value Points	Total
25.	Draw the diagram showing the structure of HIV. *Ans.* : 	2
26.	"Limited use of fossil fuels helps to reduce acid rain." Give scientific reason for this statement. *Ans. :* ★ Oxides of sulphur and nitrogen are released by the combustion of fossil fuels. These cause acid rain. 1 ★ Limited use of fossil fuels reduces the release of these oxides / gases which cause acid rain. 1	2
30.	List the physical features of Neanderthal man. *OR* List the physical features of Australopithecus. *Ans.* : ★ He was rather short. ★ Heavily built and exceedingly strong. $\frac{1}{2}$ ★ Brow ridges were heavy. $\frac{1}{2}$ ★ Forehead was sloping. ★ Small chin. $\frac{1}{2}$ ★ Protruding jaws. $\frac{1}{2}$ (any *four*) *OR*	2

Qn. Nos.	Value Points	Total
	Ans. :	
	★ They were relatively short, about four and a half feet in height. $\frac{1}{2}$	
	★ Forehead was low. $\frac{1}{2}$	
	★ The brain capacity was equal to modern gorillla. $\frac{1}{2}$	
	★ They walked erect. $\frac{1}{2}$	
	★ The cranial capacity was only about one-third of modern man.	
	(Any *four*)	2
36.	Mention the similarities and differences found in the striated muscle fibres and the cardiac muscle fibres based on their structure.	
	Ans. : Similarities :	
	(i) The muscle fibres are elongated and cylindrical. 1	
	(ii) Cross bands are found. 1	
	Difference :	
	Striated muscle fibres are unbranched. Cardiac muscle fibres are branched. The branches are connected with one another. 1	3
38.	Explain the process of replication of DNA.	
	OR	
	Explain the double helix structure of DNA molecule.	
	Ans. :	
	★ The process of replication begins with the breaking of hydrogen bonds between the nitrogenous bases of complementary nucleotide strands. The two strands of DNA helix get unwound to form a fork-like structure. 1	
	★ The two open strands serve as templates for the assembly of nucleotides to form the daughter strands. The assembly of nucleotides on the parent DNA template is brought about by some enzymes. 1	

Qn. Nos.	Value Points	Total
	★ The assembly of new bases against the exposed bases of parent DNA strands takes place in a complementary mode. This process continues till the two daughter DNA strands are formed. 1	3
	OR	
	Ans. :	
	★ The structure of DNA molecule resembles a spirally twisted ladder. $\frac{1}{2}$	
	★ The molecule of DNA has a pair of polynucleotide chains running antiparallel to each other. They are intertwined and helically coiled around the other. $\frac{1}{2}$	
	★ Each nucleotide unit consists of deoxyribose sugar, phosphate and nitrogenous base. $\frac{1}{2}$	
	★ Each strand of the ladder is made up of pentose sugar and phosphate arranged alternatively. $\frac{1}{2}$	3
	★ The nitrogen bases connect the two opposite strands like the rungs of a ladder. $\frac{1}{2}$	
	★ There are two types of purine bases namely adenine and guanine and two types of pyrimidine bases namely cytosine and thymine. Adenine pairs with thymine and guanine pairs with cytosine. $\frac{1}{2}$	

Qn. Nos.	Value Points	Total
42.	Draw the diagram showing the vertical section of the human eye and label the following parts : (a) Lens (b) Optic nerve. *Ans.* :  DIAGRAM — 3 For each correct part — $2 \times \frac{1}{2} = 1$	4