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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 — 2018

S. S. L. C. EXAMINATION, MARCH/APRIL, 2018

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 02. 04. 2018] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 02. 04. 2018] **CODE NO. : 83-E (Bio)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / **Biology**)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh & Regular Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**

[Max. Marks : 80

Qn. Nos.	Value Points	Total
2.	The living component of xylem tissue is *Ans.* : (B) — xylem parenchyma	1
5.	If the stages of human evolution is written in the descending order according to their cranial capacity, then the correct order obtained is *Ans.* : (D) — Homo sapiens, Homo erectus, Homo habilis, Australopithecus.	1
8.	Antheridium of pteridophytes can be compared to *Ans.* : (A) — Stamen of angiosperms.	1
9.	The gas released when the sunlight breaks down chlorofluorocarbons is *Ans.* : (D) — chlorine	1
14.	Name the family and the order to which man belongs. *Ans.* : Family : Hominidae $\frac{1}{2}$ Order : Primates $\frac{1}{2}$	1

Qn. Nos. | **Value Points** | **Total**

18. A person is having the symptoms of thirst and frequent urination for a long time. The blood capillaries in the retina of this person have ruptured causing blood entering into the vitreous humour making it opaque. Name the eye disorder found in this person.

Ans. :

Diabetic retinopathy. 1

20. In animal breeding, write the two differences between outbreeding and hybridization.

Ans. :

Outbreeding	*Hybridization*
i) Crossing of superior males of one breed with superior females of another breed	i) Superior males and females of two different species are mated. 1
ii) Allows the desirable qualities of the two breeds to appear in the offspring.	ii) The progeny are often different from both the parental species 1

2

23. Observe the table in which the sizes of different DNA fragments are given and answer the questions :

DNA fragments	A	B	C
Size (in base pairs)	700	1500	3000

(a) In the process of separating DNA fragments, which fragment moves faster ?

(b) Explain the process of separating the DNA fragments.

Ans. :

a) A 1

b) ★ By gel electrophoresis, the DNA fragments get separated on the basis of their size and net electrical charge. $\frac{1}{2}$

★ Shorter fragments move fast when compared to larger fragments and get arranged to form a series of bands in the form of fingerprint. $\frac{1}{2}$

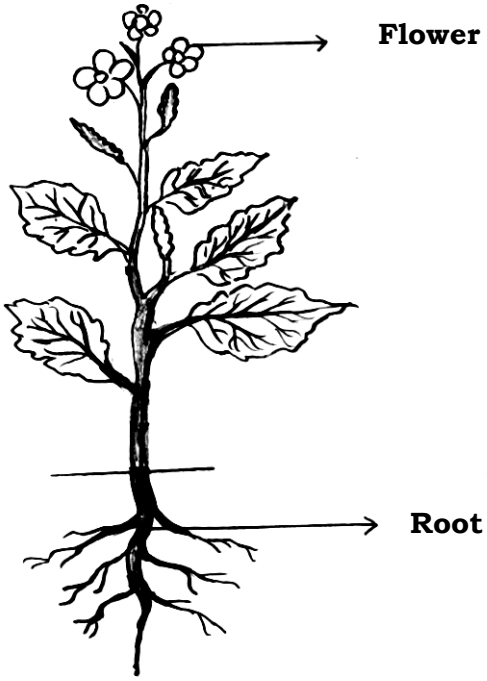
2

Qn. Nos.	Value Points	Total
25.	What is monohybrid cross ? Write the genotypic ratio and phenotypic ratio of Mendel's monohybrid cross.	
	OR	
	Carl Correns conducted hybridization experiment using Four O' Clock plants. Draw the checker board of F_2 generation for the incomplete dominance phenomenon, when he crossed a homozygous plant having red flowers (RR) with another homozygous plant with white flowers (WW). Mention its genotypic ratio.	
	Ans. :	
	★ A cross between two plants which differ in one specific character. 1	
	★ Genotypic ratio 1 : 2 : 1 $\frac{1}{2}$	
	★ Phenotypic ratio 3 : 1 $\frac{1}{2}$	2
	OR	
	★	

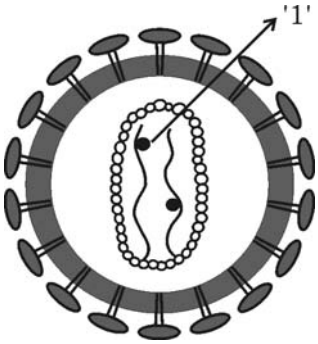
Gametes	*R*	*W*
R	*RR*	*RW*
W	*RW*	*WW*

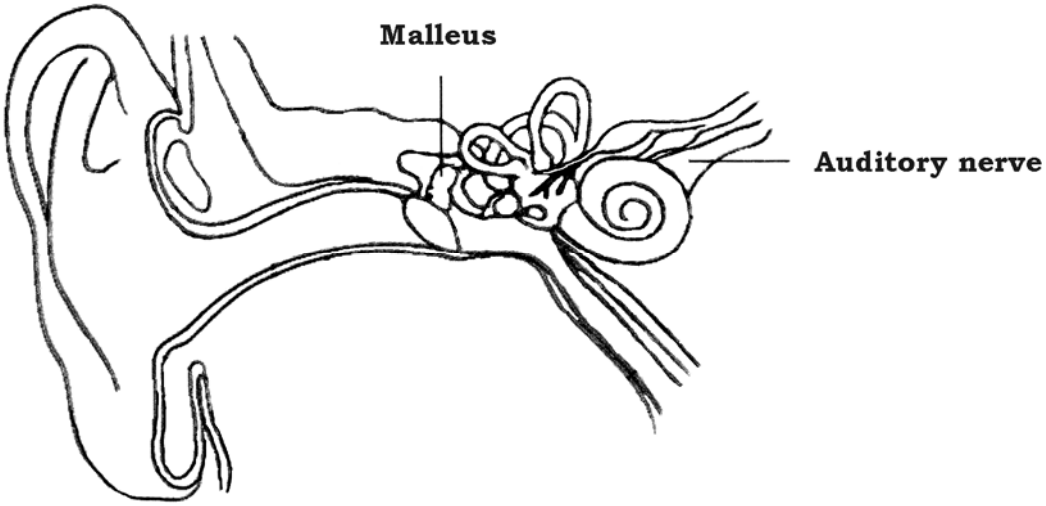
$1\frac{1}{2}$

	★ Genotypic ratio 1 : 2 : 1 $\frac{1}{2}$	2

Qn. Nos.	Value Points	Total
26.	Draw the diagram of a dicot plant and label the following parts : (i) Flower (ii) Root. *Ans.* :  Diagram — 1 Correct parts : $\frac{1}{2} + \frac{1}{2}$	2
29.	How is greenhouse effect caused ? Explain. Name the greenhouse gases. *Ans.* : ★ The infrared rays released due to the heating of the earth by solar radiation, are trapped by some gases in the atmosphere. $\frac{1}{2}$ ★ This results in increase in the atmospheric temperature. This increase is called greenhouse effect. $\frac{1}{2}$ ★ Greenhouse gases — Carbon dioxide, oxides of nitrogen, methane and to some extent ozone (any *two* gases) 1	2

Qn. Nos.	Value Points	Total
31.	Among the following, identify the wrong statements with respect to a whale and write them correctly. (i) A pair of lungs are respiratory organs (ii) They do not have mammary glands (iii) Heart is four chambered (iv) They are oviparous. OR The organisms, (i) Amphioxus, (ii) Balanoglossus, belong to which sub-phyla of Chordata and why ? *Ans.* : Corrected statements : i) They have mammary glands 1 ii) They are viviparous. 1	2
	OR i) Sub-phylum Cephalochordata. The notochord is present throughout the length of the body. $\frac{1}{2} + \frac{1}{2}$ ii) Sub-phylum Hemichordata. The notochord is restricted to the anterior half of the body. $\frac{1}{2} + \frac{1}{2}$	2
36.	Explain the Haversian system of bone tissue. OR Explain the structure of cartilage tissue. *Ans.* : i) There is a central Haversian canal containing blood vessels and nerves. ii) It is surrounded by a matrix called ossein which contains chiefly calcium phosphate. iii) Ossein is arranged in the form of concentric layers called lamellae. iv) Between the lamellae are fluid filled spaces called lacunae.	

Qn. Nos.	Value Points	Total
	v) Each lacuna has an osteocyte. vi) All the lamellae are interconnected by fine canals called canaliculi. vii) The osteocytes are interconnected by protoplasmic strands extending through the canaliculi. viii) The Haversian canals of adjoining Haversian systems are connected by Volkman's canal. (Any *six*) $6 \times \frac{1}{2}$ OR i) Presence of transluscent glossy matrix composed by chondrin. ii) The matrix has cells called chondrocytes in spaces called lacunae. iii) Cells may be present singly or in groups. iv) In the matrix, elastic and collagen fibres are present / white and yellow fibres are present. v) These fibres are not visible in cartilage because of the same refractive index of matrix and fibres. vi) Cartilage is externally surrounded by a connective tissue layer called perichondrium. $6 \times \frac{1}{2}$	3 3
38.	Observe this figure and answer the questions given below :  (i) Name the part labelled as '1'. (ii) Name the heredity material of this virus. (iii) 'The person infected by this virus is attacked by various diseases.' Explain. *Ans.* : i) Reverse transcriptase enzyme / enzyme 1 ii) RNA 1 iii) ★ With the help of the enzyme RNA synthesizes DNA in the host cell. $\frac{1}{2}$	

Qn. Nos.	Value Points	Total
	★ This virus gets adapted to the host body and the body cells fail to identify this as intruder. $\frac{1}{2}$ ★ The virus destroys the natural immunity of the body. This leads to secondary infections. (any *two*)	3
42.	Draw the diagram showing the internal structure of human ear and label the following parts. (i) Malleus (ii) Auditory nerve. *Ans.* :  For diagram — 3 For each correct part — $2 \times \frac{1}{2}$	4