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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, 2018

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 25. 06. 2018]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 25. 06. 2018]

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

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / Biology)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : 100

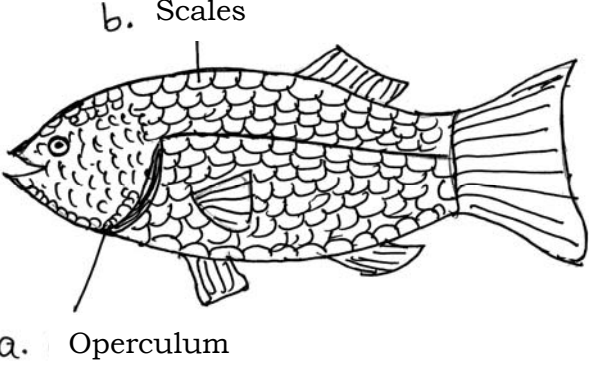
[Max. Marks : 100

Qn. Nos.	Value Points	Total
3.	<p>The group that contains only non-biodegradable pollutants is,</p> <p>(a) wood, paper, leather</p> <p>(b) lead, bakelite, DDT</p> <p>(c) plastic, detergents, grass</p> <p>(d) polythene, bakelite, PVC.</p> <p>(A) (b) only</p> <p>(B) (a) and (c)</p> <p>(C) (d) only</p> <p>(D) (b) and (d).</p> <p>Ans. :</p> <p>(D) — (b) and (d).</p>	1

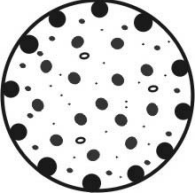
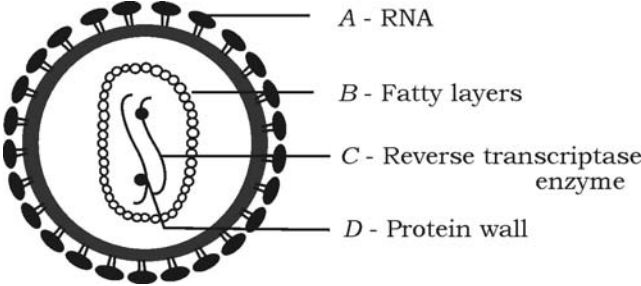
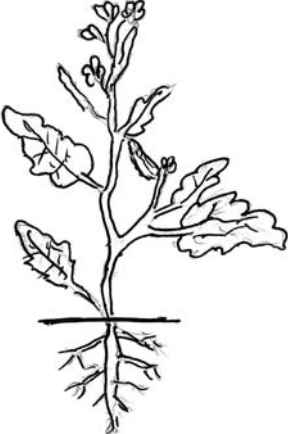
PR (D)-60017 (BIO)

[Turn over

Qn. Nos.	Value Points	Total
5.	<p>A person shows the symptoms such as ulcers on the nose and lower leg, gradual blindness and dementia. The disease having these symptoms and the microbe causing this disease is</p> <p>(A) Syphilis — Treponema Pallidum (B) Gonnorrhoea — Neisseria Gonorrhoeae (C) Genital warts — Human Papilloma virus (D) Genital herpes — Herpes Simplex virus.</p> <p>Ans. :</p> <p>(A) — Syphilis — Treponema Pallidum</p>	1
10.	<p>The features of oesophagus muscles are</p> <p>(A) Striped, cylindrical shape, voluntary (B) Unstriped, spindle shape, involuntary (C) Striped, cylindrical shape, involuntary (D) Unstriped, spindle shape, voluntary.</p> <p>Ans. :</p> <p>(B) — Unstriped, spindle shape, involuntary</p>	1
14.	<p>Write any two functions of feathers in birds.</p> <p>Ans. :</p> <p>i) They provide protection ii) Maintain body temperature iii) Help in flight iv) Help in attracting the opposite sex. (Any two)</p>	$2 \times \frac{1}{2}$ 1
17.	<p>State the Mendel's law of segregation.</p> <p>Ans. :</p> <p>"The pair of factors for a given character separates in equal ratio at the time of gamete formation during meiosis."</p>	1
18.	<p>When a person is very angry, the rate of heart-beat and breathing increases. Name the part of autonomic nervous system that brings these changes into normal condition.</p> <p>Ans. :</p> <p>Parasympathetic nervous system.</p>	1

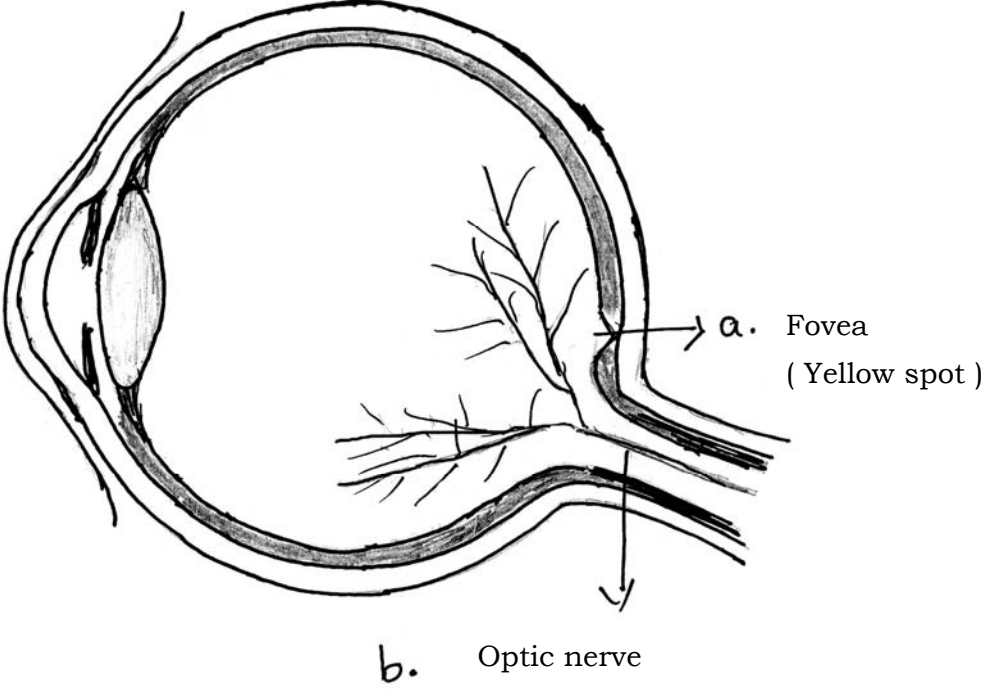
Qn. Nos.	Value Points	Total
20.	<p>Draw the diagram showing the external features of a fish and label the following parts.</p> <p>(a) Operculum (b) Scales.</p> <p>Ans. :</p> <div style="text-align: center;">  </div>	$1 + \frac{1}{2} + \frac{1}{2}$ 2
22.	<p>Mention four physical features of Neanderthal man.</p> <p style="text-align: center;">OR</p> <p>Write any two physical features of Caucasoids and Congoids.</p> <p>Ans. :</p> <p>i) He was rather short. ii) Heavily built and exceedingly strong. iii) Brow ridges were heavy. iv) Forehead was sloping with small chin. v) Protruding jaws. (Any four)</p> <p style="text-align: center;">OR</p> <p><i>Caucasoids :</i></p> <p>i) Light skin. ii) Blue or dark brown eyes. iii) High ridged nose with narrow nostrils. iv) Hair is straight or wavy.</p> <p><i>Cangoids :</i></p> <p>i) Black skin ii) Thick lip iii) Broad nose iv) Hair is woolly. (Any two each)</p>	$4 \times \frac{1}{2}$ 2

Qn. Nos.	Value Points	Total
25.	<p>“The environmentalists oppose the overuse of the products containing aerosols.” Give reasons.</p> <p>Ans. :</p> <ul style="list-style-type: none"> i) They release the substance called chlorofluorocarbons (CFC's) ii) They deplete the ozone layer. iii) They cause mutations in organisms. iv) They affect the growth of plants and animals. v) They cause imbalance in the ecosystem. vi) They affect the natural balance of gases. <p>(Any other suitable point) (Any four) $4 \times \frac{1}{2}$</p>	2
28.	<p>“The Government should encourage urban people to take up the practice of roof top gardening.” Why ? Give reasons.</p> <p style="text-align: center;">OR</p> <p>“Transgenic plants play a very important role in decreasing the food scarcity of the country.” How ? Explain.</p> <p>Ans. :</p> <ul style="list-style-type: none"> i) It increases access to safe outdoor green space. ii) It improves air quality due to increased absorption of carbon dioxide iii) It provides habitat for butterflies and birds. iv) It becomes a source of recreation. v) It encourages urban food production. vi) Reduces temperature. (Any four) $4 \times \frac{1}{2}$ <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> i) Increases production of yield. ii) Developing disease-free plants. iii) Virus-resistant plants can be developed. iv) Vitamin ‘A’ enriched plants can be developed. v) Pest resistant plants can be developed. <p>(Any other suitable point) (Any four) $4 \times \frac{1}{2}$</p>	2

Qn. Nos.	Value Points	Total
31.	<p>A student observes the cross-section of a plant stem under the compound microscope and draws the following diagram.</p>  <p>(a) Name the group of angiosperms to which this stem belongs. (b) Write the features of that group with respect to root and flower.</p> <p>Ans. :</p> <p>a) It belongs to monocot plants. 1</p> <p>b) i) It has fibrous root system. $\frac{1}{2}$</p> <p>ii) The floral whorls are found in multiples of three. $\frac{1}{2}$</p>	2
34.	<p>A student has wrongly labelled the parts A, B, C and D in the following diagram.</p>  <p>Correct his mistakes and name the parts A, B, C and D of the diagram.</p> <p>Ans. :</p> <p>A — Fatty layers B — Protein wall</p> <p>C — RNA D — Reverse transcriptase enzyme. $4 \times \frac{1}{2}$</p>	2
37.	<p>Draw the diagram of a dicot plant.</p> <p>Ans. :</p> 	2

Qn. Nos.	Value Points	Total						
39.	<p>Write the two differences between rods and cones of the human eye.</p> <p>Ans. :</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; border-right: 1px solid black;"><i>Rod cells</i></td> <td style="width: 50%; text-align: center;"><i>Cone cells</i></td> </tr> <tr> <td style="border-right: 1px solid black;">i) Sensitive to dim light</td> <td>i) Sensitive to bright light</td> </tr> <tr> <td style="border-right: 1px solid black;">ii) Cannot differentiate colours</td> <td>ii) Can differentiate colours</td> </tr> </table>	<i>Rod cells</i>	<i>Cone cells</i>	i) Sensitive to dim light	i) Sensitive to bright light	ii) Cannot differentiate colours	ii) Can differentiate colours	2
<i>Rod cells</i>	<i>Cone cells</i>							
i) Sensitive to dim light	i) Sensitive to bright light							
ii) Cannot differentiate colours	ii) Can differentiate colours							
42.	<p>Write any four economic importance of pteridophytes.</p> <p>Ans. :</p> <ul style="list-style-type: none"> i) Ferns are grown for their ornamental value ii) Leaves are used in making flower bouquet iii) Some ferns are of medicinal importance iv) Some ferns like horse-tails and club mosses are involved in the formation of fossils fuel like coal and petroleum. 	2						
44.	<p>Mention any four functions of epithelial tissue.</p> <p>Ans. :</p> <ul style="list-style-type: none"> i) Epithelium forms a thick tough barrier and protects the underlying tissue in the skin. ii) Epithelium of the skin also helps in maintaining constant body temperature. iii) It helps in movement of materials. iv) It helps in absorption of nutrients and excretion. v) It permits materials to diffuse through it. 	2						
46.	<p>What is dihybrid cross ? Represent the result obtained in F_2 generation of dihybrid cross when a tall pea plant bearing yellow seeds ($TTYy$) is crossed with a dwarf pea plant bearing green seeds ($ttyy$) with the help of checker board.</p> <p style="text-align: center;">OR</p> <p>Explain the double helix structure of DNA molecule.</p>							

Qn. Nos.	Value Points	Total																														
	<p>Ans. :</p> <p>A cross between two plants with two pairs of contrasting characters is called 'dihybrid cross'.</p> <table border="1"> <thead> <tr> <th>Gametes</th> <th>TY</th> <th>Ty</th> <th>tY</th> <th>ty</th> <th></th> </tr> </thead> <tbody> <tr> <td>TY</td> <td>TTY_Y</td> <td>TTY_y</td> <td>TtYY</td> <td>TtYy</td> <td>$\frac{1}{2}$</td> </tr> <tr> <td>Ty</td> <td>TTY_y</td> <td>TTyy</td> <td>TtYy</td> <td>Ttyy</td> <td>$\frac{1}{2}$</td> </tr> <tr> <td>tY</td> <td>TtYY</td> <td>TtYy</td> <td>ttYY</td> <td>ttYy</td> <td>$\frac{1}{2}$</td> </tr> <tr> <td>ty</td> <td>TtYy</td> <td>Ttyy</td> <td>ttYy</td> <td>ttyy</td> <td>$\frac{1}{2}$</td> </tr> </tbody> </table> <p style="text-align: center;">OR</p> <p>i) The structure of DNA molecule resembles a spirally twisted ladder. ii) A pair of polynucleotide chains are helically coiled and antiparallel to each other. iii) Each nucleotide unit contains — Deoxyribose sugar, phosphate and nitrogenous base. iv) Each strand of the ladder is made up of pentose sugar and phosphate arranged alternatively. v) The nitrogen bases connect the two opposite strands like the rungs of ladder. vi) There are two types of nitrogenous bases namely purines and pyrimidines. Always Adenine pairs with Thymine and Guanine pairs with cytosine. / complementary pairing of nitrogen bases.</p> <p style="text-align: right;">$6 \times \frac{1}{2}$</p>	Gametes	TY	Ty	tY	ty		TY	TTY _Y	TTY _y	TtYY	TtYy	$\frac{1}{2}$	Ty	TTY _y	TTyy	TtYy	Ttyy	$\frac{1}{2}$	tY	TtYY	TtYy	ttYY	ttYy	$\frac{1}{2}$	ty	TtYy	Ttyy	ttYy	ttyy	$\frac{1}{2}$	3
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ty	TtYy	Ttyy	ttYy	ttyy	$\frac{1}{2}$																											
49.	<p>Explain the structure and function of a nerve cell.</p> <p>Ans. :</p> <p>Structure :</p> <p>i) It consists of prominent nucleus and a cell body with short projection arising from the cell body which are called dendrites. ii) The long extension of the cell body in the axon. iii) The axon ends in a bunch of branches called telodendrons.</p>	3																														

Qn. Nos.	Value Points	Total
	iv) The axon is covered by a fatty sheath called myelin sheath. $4 \times \frac{1}{2}$ <i>Function :</i> It transmits information in the form of nerve impulses from different parts of the body to the nerve centres. It also very quickly brings back the responses. <p style="text-align: center;">or</p> Brings irritability. 1	3
52.	Draw the vertical section of the human eye and label the following parts. (a) The region where a distinct clear image is formed (b) The sensory nerve which carries visual impulses to the cerebrum of brain. <i>Ans. :</i> 	$3 + \frac{1}{2} + \frac{1}{2}$ 4