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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 — 2019

S. S. L. C. EXAMINATION, MARCH/APRIL, 2019

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 02. 04. 2019]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 02. 04. 2019]

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

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / Biology)

(ಹಳೆ ಪಠ್ಯಕ್ರಮ / Old Syllabus)

(ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : 100

[Max. Marks : 100

Qn. Nos.	Value Points	Total
2.	The hormone which inhibits the growth of the plants is (A) auxin (B) abscisic acid (C) gibberellin (D) cytokinin Ans. : (B) — abscisic acid	1

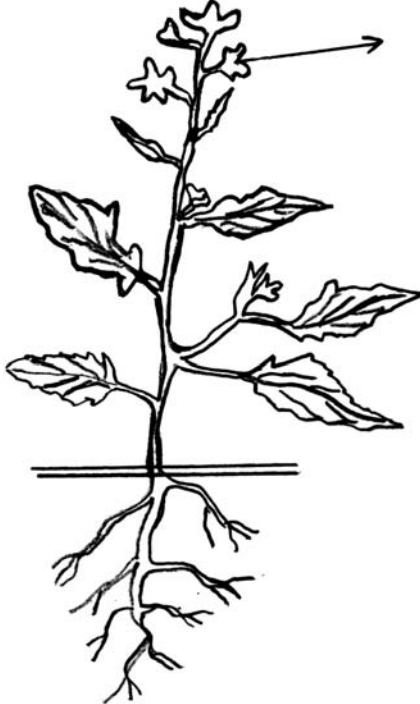
PR(D)-722 (BIO)

[Turn over

Qn. Nos.	Value Points	Total
5.	<p>A tall pea plant is crossed with a dwarf pea plant. If 24 pea plants are obtained in F_2 generation then the correct numbers of tall and dwarf pea plants are</p> <p>(A) 18 tall and 6 dwarf</p> <p>(B) 12 tall and 12 dwarf</p> <p>(C) 6 tall and 18 dwarf</p> <p>(D) 16 tall and 8 dwarf</p> <p><i>Ans. :</i></p> <p>(A) — 18 tall and 6 dwarf</p>	1
8.	<p>One of the factors responsible for the depletion of ozone layer is</p> <p>(A) reforestation</p> <p>(B) use of biofuel</p> <p>(C) use of detergents</p> <p>(D) use of aerosols</p> <p><i>Ans. :</i></p> <p>(D) — use of aerosols.</p>	1

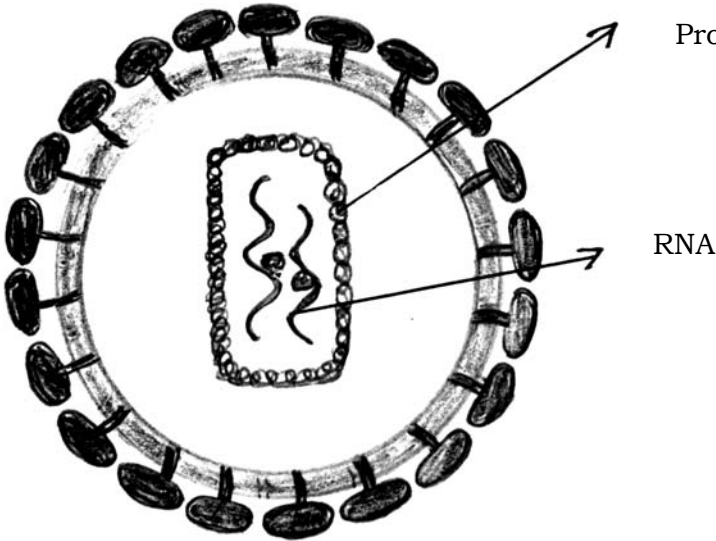
Qn. Nos.	Value Points	Total																
11.	<p>The types of animal tissue are given in Column-A and their functions are given in Column-B. Match them and write the answer along with its letter :</p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: center; width: 50%;">Column - A</th> <th style="text-align: center; width: 50%;">Column - B</th> </tr> </thead> <tbody> <tr> <td>(A) Lymph</td> <td>(i) attaches muscles to the bones</td> </tr> <tr> <td>(B) Bone marrow</td> <td>(ii) responds to the stimulus</td> </tr> <tr> <td>(C) Tendon</td> <td>(iii) produces antibodies</td> </tr> <tr> <td>(D) Cartilage</td> <td>(iv) connects one bone to another</td> </tr> <tr> <td></td> <td>(v) brings bending and stretching movements of the body</td> </tr> <tr> <td></td> <td>(vi) facilitates transport of substances in the body</td> </tr> <tr> <td></td> <td>(vii) produces blood cells</td> </tr> </tbody> </table> <p><i>Ans. :</i></p> <p>(A) — (iii) produces antibodies</p> <p>(B) — (vii) produces blood cells</p> <p>(C) — (i) attaches muscles to the bones</p> <p>(D) — (v) brings bending and stretching movements of the body</p> <p style="text-align: right;">4 × 1</p>	Column - A	Column - B	(A) Lymph	(i) attaches muscles to the bones	(B) Bone marrow	(ii) responds to the stimulus	(C) Tendon	(iii) produces antibodies	(D) Cartilage	(iv) connects one bone to another		(v) brings bending and stretching movements of the body		(vi) facilitates transport of substances in the body		(vii) produces blood cells	4
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14.	<p>Name the male and female gametes producing structures found in gametophyte of bryophytes.</p> <p><i>Ans. :</i></p> <p>i) Male gametes producing structure — antheridia $\frac{1}{2}$</p> <p>ii) Female gametes producing structure — archegonia. $\frac{1}{2}$</p>	1																

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17.	<p>The platelets count in the blood sample of a person is found to be $40,000/\text{mm}^3$. Then, from which disease that person is suffering ?</p> <p><i>Ans. :</i></p> <p>Dengue.</p>	1
20.	<p>Nowadays biofuels are used as alternative to fossil fuels. Give scientific reasons.</p> <p><i>Ans. :</i></p> <p><i>Reasons :</i></p> <p>Fossil fuels —</p> <p>(i) Non-renewable energy sources.</p> <p>(ii) Responsible for air pollution.</p> <p>(iii) Responsible for thermal pollution.</p> <p>(iv) Responsible for acid rain. (Any two) $2 \times \frac{1}{2}$</p> <p>Biofuels —</p> <p>(i) Renewable energy sources.</p> <p>(ii) Do not cause air pollution.</p> <p>(iii) Do not cause thermal pollution.</p> <p>(iv) Do not cause acid rain. (Any two) $2 \times \frac{1}{2}$</p>	2
23.	<p>Mention the modes of transmission of HIV infection.</p> <p><i>Ans. :</i></p> <p>(i) Sexual contact with an infected person.</p> <p>(ii) Transfusion of infected blood.</p> <p>(iii) Sharing of needles and syringes with an infected person.</p> <p>(iv) From an infected mother to the embryo through placenta. $4 \times \frac{1}{2}$</p>	2

Qn. Nos.	Value Points	Total
25.	<p>Draw the diagram of a dicot plant and label its reproductive part.</p> <p>Ans. :</p>  <p style="text-align: right;">Flower</p> <p style="text-align: right;">For diagram — $1\frac{1}{2}$</p> <p style="text-align: right;">For labelling — $\frac{1}{2}$</p>	2
28.	<p>A student observes a flying bat and decides that it belongs to the class aves. Whether the student's decision is correct ? Clarify with reasons.</p> <p>Ans. :</p> <ul style="list-style-type: none"> ★ The student's decision is wrong. $\frac{1}{2}$ ★ Bat belongs to the class mammalia. $\frac{1}{2}$ <p>Reasons : The bat is having the following features of mammals.</p> <ol style="list-style-type: none"> (i) Viviparous (ii) Exoskeleton is represented by hairs (iii) Limbs with digits are ending in nails. (iv) Teeth are of different types (heterodont) (v) Mammary glands are present in female to nourish the young ones. <p>(Any two features related to mammals) $2 \times \frac{1}{2}$</p>	2

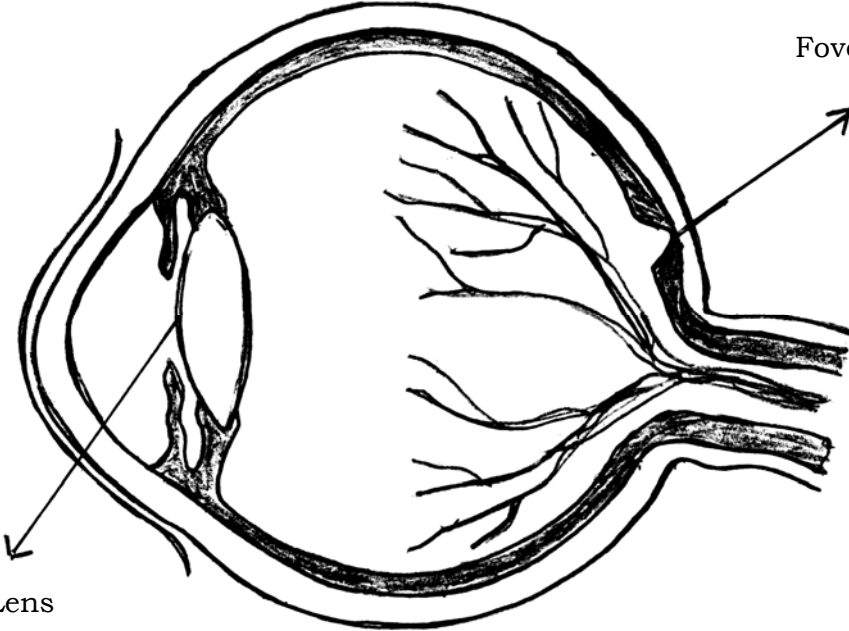
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29.	<p>What is tissue culture ? Mention any two advantages of this technology.</p> <p style="text-align: center;">OR</p> <p>What is hydroponics ? Mention any two advantages of hydroponics.</p> <p><i>Ans. :</i></p> <p>The practice of growing plant cells and tissues in a suitable culture medium, under controlled laboratory conditions. It is called tissue culture.</p> <p><i>Advantages :</i></p> <p>(i) Tissue culture is extensively used for large scale propagation of medicinal and ornamental plants.</p> <p>(ii) It is also used for propagating crop and forest plants.</p> <p>(iii) Tissue culture is also used for developing disease-free plants.</p> <p>(iv) Cell culture is used particularly for the extraction of many useful metabolites. (any two) $2 \times \frac{1}{2} = 1$</p> <p style="text-align: center;">OR</p> <p>There is a practice of growing plants in mineral nutrient solutions in water, without soil. It is called hydroponics.</p> <p><i>Advantages :</i></p> <p>(i) Soil is not required.</p> <p>(ii) Water requirement is very less.</p> <p>(iii) Yields are stable and high.</p> <p>(iv) There will be no weeds to remove</p> <p>(v) Plants grow much healthier. (Any two) $2 \times \frac{1}{2}$</p>	<p style="text-align: right;">1</p> <p style="text-align: right;">2</p> <p style="text-align: right;">1</p> <p style="text-align: right;">2</p>

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33.	<p>How does the Caucasoid man differ from Mongoloid man in physical features ?</p> <p style="text-align: center;">OR</p> <p>How does the Caucasoid man differ from Congoid man in physical features ?</p> <p>Ans. :</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;"><i>Caucasoid man</i></th> <th style="width: 50%; text-align: center;"><i>Mongoloid man</i></th> </tr> </thead> <tbody> <tr> <td>(i) Light skin</td> <td>(i) Yellowish or reddish skin</td> </tr> <tr> <td>(ii) Ridged nose</td> <td>(ii) Wider nose</td> </tr> <tr> <td>(iii) Hair is straight or wavy</td> <td>(iii) Hair is straight</td> </tr> <tr> <td colspan="2" style="text-align: right;">(Any two)</td> </tr> </tbody> </table> <p style="text-align: center;">OR</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;"><i>Caucasoid man</i></th> <th style="width: 50%; text-align: center;"><i>Congoid man</i></th> </tr> </thead> <tbody> <tr> <td>(i) Light skin</td> <td>(i) Black skin</td> </tr> <tr> <td>(ii) Ridged nose</td> <td>(ii) Broad nose</td> </tr> <tr> <td>(iii) Hair is straight or wavy</td> <td>(iii) Hair is woolly</td> </tr> <tr> <td colspan="2" style="text-align: right;">(Any two)</td> </tr> </tbody> </table>	<i>Caucasoid man</i>	<i>Mongoloid man</i>	(i) Light skin	(i) Yellowish or reddish skin	(ii) Ridged nose	(ii) Wider nose	(iii) Hair is straight or wavy	(iii) Hair is straight	(Any two)		<i>Caucasoid man</i>	<i>Congoid man</i>	(i) Light skin	(i) Black skin	(ii) Ridged nose	(ii) Broad nose	(iii) Hair is straight or wavy	(iii) Hair is woolly	(Any two)		<p style="text-align: right;">1 + 1</p> <p style="text-align: right;">2</p> <p style="text-align: right;">1 + 1</p> <p style="text-align: right;">2</p>
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36.	<p>Draw the diagram showing the structure of HIV. Label the following parts :</p> <p>(i) RNA</p> <p>(ii) Protein wall.</p> <p>Ans. :</p>  <p>For diagram — $1\frac{1}{2}$</p> <p>For labelling — $\frac{1}{2}$</p>	2
39.	<p>What is diabetes mellitus ? Write the symptoms of this condition.</p> <p>Ans. :</p> <p>Undersecretion of Insulin leads to increased level of glucose in the blood that is excreted through urine. This condition is called diabetes mellitus.</p> <p>Symptoms :</p> <p>(i) Increased glucose level in the blood.</p> <p>(ii) Excretion of glucose through urine</p> <p>(iii) Frequent urination.</p> <p>(iv) Thirst & Fatigue</p> <p>(v) Sweating.</p> <p>(Any two)</p>	<p>1</p> <p>$2 \times \frac{1}{2}$</p> <p>2</p>

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41.	<p>What is biotechnology ? Mention any two limitations of biotechnology.</p> <p><i>Ans. :</i></p> <p>The application of technological procedures on organisms <i>or</i> their processes <i>or</i> their products to obtain new substances for human welfare is called biotechnology. 1</p> <p><i>Limitations :</i></p> <p>(i) Seed sterility</p> <p>(ii) Would harm human health</p> <p>(iii) Would upset the balance of the nature.</p> <p style="text-align: right;">(Any two) $2 \times \frac{1}{2}$</p>	2								
44.	<p>Write any two differences between Xylem and Phloem tissues.</p> <p><i>Ans. :</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;"><i>Xylem</i></th> <th style="width: 50%; text-align: center;"><i>Phloem</i></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">(i) Transports water and minerals to different parts of the plant</td> <td style="vertical-align: top;">(i) Conducts food to different parts of the plant</td> </tr> <tr> <td style="vertical-align: top;">(ii) It is composed of xylem parenchyma, xylem fibres, xylem vessels and tracheids</td> <td style="vertical-align: top;">(ii) It is composed of sieve tubes, companion cells, phloem fibres and phloem parenchyma</td> </tr> <tr> <td style="vertical-align: top;">(iii) Xylem vessels and tracheids play an important role in the conduction of water</td> <td style="vertical-align: top;">(iii) Sieve tubes play an important role in the conduction of food.</td> </tr> </tbody> </table> <p style="text-align: right;">(Any two) 1 + 1</p>	<i>Xylem</i>	<i>Phloem</i>	(i) Transports water and minerals to different parts of the plant	(i) Conducts food to different parts of the plant	(ii) It is composed of xylem parenchyma, xylem fibres, xylem vessels and tracheids	(ii) It is composed of sieve tubes, companion cells, phloem fibres and phloem parenchyma	(iii) Xylem vessels and tracheids play an important role in the conduction of water	(iii) Sieve tubes play an important role in the conduction of food.	2
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48.	<p>(a) Explain the technology of obtaining DNA fingerprint of an individual.</p> <p>(b) How does the DNA fingerprint technology help to solve legal disputes ?</p> <p style="text-align: center;">OR</p> <p>Write the importance of DNA with respect to the following :</p> <p>(a) Heredity</p> <p>(b) Protein synthesis</p> <p>(c) Mutation.</p> <p><i>Ans. :</i></p> <p>(a) ★ The DNA of an individual is broken down into short segments using specific enzymes, then separating the same using a process called gel electrophoresis. The fragments get separated on the basis of their size and net electrical charge. 1</p> <p>★ Shorter segments move fast when compared to larger segment and get arranged to form a series of bands in the form of fingerprint with a unique pattern. 1</p> <p>(b) ★ Identification of dead persons. $\frac{1}{2}$</p> <p>★ Identification of genetic relationship between parents and children. $\frac{1}{2}$</p> <p style="text-align: center;">OR</p>	3

Qn. Nos.	Value Points	Total
	(a) <i>Heredity</i> : By its special property of self replication, it ensures the equal distribution of similar genetic material to offsprings and thus responsible for heredity. 1 (b) <i>Protein synthesis</i> : DNA synthesises RNA which codes for the synthesis of specific proteins. So DNA indirectly helps in protein synthesis. 1 (c) <i>Mutation</i> : DNA some times undergoes mutation and recombination which bring about variations in the characters of the offspring. 1	3
52.	Draw the diagram showing the structure of vertical section of the human eye. Label the following parts. (i) Fovea (ii) Lens. Ans. :	
	<div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 20px;"> For diagram — 3 For labelling — $2 \times \frac{1}{2}$ </div>	4