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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, ಜೂನ್ — 2015

S. S. L. C. EXAMINATION, JUNE, 2015

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 17. 06. 2015]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio.)**

Date : 17. 06. 2015]

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

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / Biology)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Repeater)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಪರಮಾವಧಿ ಅಂಕಗಳು : 80

[**Max. Marks : 80**

Qn. Nos.	Value Points	Total
3.	One of the best solutions to manage non-biodegradable wastes is Ans. : (D) — recycling	1
6.	Correct group amongst the following is Ans. : (C) — Phloem — complex permanent — transports food, tissue, elongated cells mechanical support	1
8.	Analyse the relationship and choose the correct answer : Gonorrhoea : Neisseria :: Syphilis : Ans. : (C) — Treponema	1



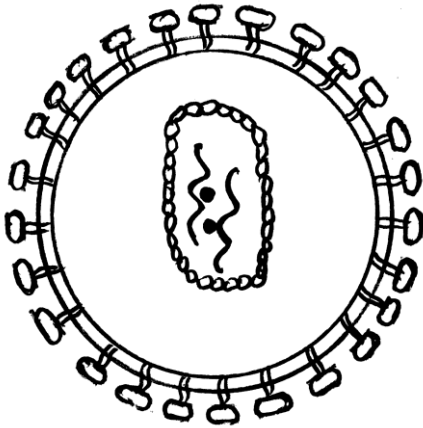
RR-116



[Turn over

Qn. Nos.	Value Points	Total																								
11.	<p>Match the names of the plants given in Column-A with their characteristics given in Columns-B and C. Write the answers in the space provided : $4 \times 1 = 4$</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Plants</th> <th colspan="2" style="text-align: center;">Characteristics</th> </tr> <tr> <th style="text-align: center;">Column- A</th> <th style="text-align: center;">Column- B</th> <th colspan="2" style="text-align: center;">Column- C</th> </tr> </thead> <tbody> <tr> <td>(A) Red algae</td> <td>(c) Thalloid structure, phycoerythrin in excess</td> <td>(i) Vegetative reproduction — fragmentation, rhizoids are absent</td> <td></td> </tr> <tr> <td>(B) Marchantia</td> <td>(f) Thalloid structure, sporophyte is non-chlorophyllous</td> <td>(iii) Gametophyte — adult plant body, rhizoids are present</td> <td></td> </tr> <tr> <td>(C) Pinus</td> <td>(a) Seeds not enclosed by fruit, non-flowering</td> <td>(vi) Cones are the reproductive structures, megaspores contain female gametes.</td> <td></td> </tr> <tr> <td>(D) Mustard</td> <td>(e) Seeds enclosed by fruit, tetrapetalous</td> <td>(ii) Reticulate veins, presence of primary root</td> <td></td> </tr> </tbody> </table>	Plants		Characteristics		Column- A	Column- B	Column- C		(A) Red algae	(c) Thalloid structure, phycoerythrin in excess	(i) Vegetative reproduction — fragmentation, rhizoids are absent		(B) Marchantia	(f) Thalloid structure, sporophyte is non-chlorophyllous	(iii) Gametophyte — adult plant body, rhizoids are present		(C) Pinus	(a) Seeds not enclosed by fruit, non-flowering	(vi) Cones are the reproductive structures, megaspores contain female gametes.		(D) Mustard	(e) Seeds enclosed by fruit, tetrapetalous	(ii) Reticulate veins, presence of primary root		
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14.	<p>What are the functions of exoskeleton of birds ?</p> <p>Ans. :</p> <ul style="list-style-type: none"> ★ Protection ★ Maintains body temperature ★ Helps in flight ★ Helps in attracting opposite sex. (any two) $\frac{1}{2} + \frac{1}{2}$ 	1																								
16.	<p>In Indian system of medicine, use of jaggery is recommended. Give reason.</p> <p>Ans. :</p> <p>The presence of useful nutrients in addition to carbohydrates.</p>	1																								
17.	<p>Name any two seeds of plant which are used as source of bio-diesel.</p> <p>Ans. :</p> <p>Jatropha seeds</p> <p>Pongamia Pinnata (Honge) seeds.</p>	$\frac{1}{2}$ $\frac{1}{2}$																								



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18.	Name the hormones produced when glucose level is high or low in the blood. <i>Ans. :</i> More glucose level — insulin. Less glucose level — glucagon.	$\frac{1}{2}$ $\frac{1}{2}$
19.	Write any four measures to control air pollution. <i>Ans. :</i> <ul style="list-style-type: none"> ★ Industries to be established away from cities and residential areas. ★ Periodic inspection of automobiles. ★ Usage of biofuels should be encouraged. ★ Usage of public transport. (Other related answers) 	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
22.	Draw the diagram showing the structure of HIV. <i>Ans. :</i> <div style="text-align: center;">  </div>	2
25.	Write the two laws of heredity formulated by Mendel. OR What is DNA replication ? Write the chemical composition of DNA. <i>Ans. :</i> <p>a) <i>Law of segregation :</i></p> <p>The pair of factors for a given character separates in equal ratio at the time of gamete formation during meiosis.</p>	1



Qn. Nos.	Value Points	Total
	<p>b) <i>Law of independent assortment</i> :</p> <p>Factors controlling separate characters normally move independent of each other during gamete formation.</p> <p style="text-align: center;">OR</p> <p><i>DNA replication</i> :</p> <p>During the interphase before the cell divides, DNA replicates itself to ensure the equal distribution of genetic material among daughter cells. This process is known as replication of DNA.</p> <p style="text-align: center;">OR</p> <p>Process of replication of DNA during the interphase of cell division.</p> <p><i>Chemical composition of DNA</i> :</p> <p>DNA has a pair of polynucleotide chains. Each nucleotide consists of deoxyribose sugar, phosphate and nitrogenous base.</p>	<p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1</p>
28.	<p>Arrange the following human ancestral races in chronological order and write one salient feature of them :</p> <p>(a) Australopithecus (b) Cro-Magnon</p> <p>(c) Zinanthropus (d) Neanderthal man.</p> <p style="text-align: center;">OR</p> <p>Differentiate between Caucasoids and Mongoloids.</p> <p><i>Ans. :</i></p> <p>a) <i>Australopithecus</i> : Forehead was low, short, the brain capacity was equal to modern gorilla, the cranial capacity was about one-third of modern man, walked erect.</p> <p>b) <i>Cro-Magnon</i> : Large body structure, active and intelligent.</p>	<p style="text-align: center;">$\frac{1}{2}$</p> <p style="text-align: center;">$\frac{1}{2}$</p>

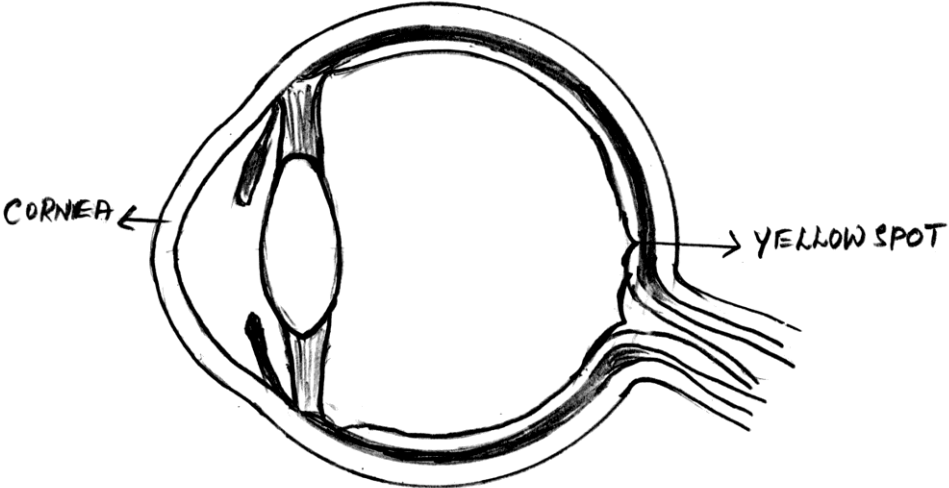


Qn. Nos.	Value Points	Total									
	<p>c) <i>Zinanthropus</i> : Stereoscopic vision (binocular vision), straighter legs with feet suitable for walking, acute hearing mechanism, able to manipulate objects with the help of hands, enlargement of cerebrum.</p> <p>d) <i>Neanderthal man</i> : Rather short, heavily built and strong, heavy brow ridges, small chin, sloping head, protruding jaws.</p> <p>(any one of the features written under each) ($\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$)</p> <p style="text-align: center;">OR</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;"><i>Caucasoids</i></td> <td style="text-align: center; width: 50%;"><i>Mongoloids</i></td> </tr> <tr> <td>★ Light skin</td> <td>Yellowish or reddish skin</td> </tr> <tr> <td>★ Straight or wavy hair</td> <td>Hair is straight</td> </tr> <tr> <td>★ High ridged nose</td> <td>Wider nose.</td> </tr> </table>	<i>Caucasoids</i>	<i>Mongoloids</i>	★ Light skin	Yellowish or reddish skin	★ Straight or wavy hair	Hair is straight	★ High ridged nose	Wider nose.	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$1 + 1$</p> <p>2</p>	
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31.	<p>Black coloured guinea pig (<i>BB</i>) is crossed with white coloured guinea pig (<i>bb</i>). Find out the ratio of the types of the offsprings produced in the F_2 generation with the help of a checker board.</p> <p>Ans. :</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Gametes</i></td> <td style="text-align: center;"><i>B</i></td> <td style="text-align: center;"><i>b</i></td> </tr> <tr> <td style="text-align: center;"><i>B</i></td> <td style="text-align: center;"><i>BB</i></td> <td style="text-align: center;"><i>Bb</i></td> </tr> <tr> <td style="text-align: center;"><i>b</i></td> <td style="text-align: center;"><i>Bb</i></td> <td style="text-align: center;"><i>bb</i></td> </tr> </table> <p style="text-align: center;">Black coloured guinea pig : White coloured guinea pig 3 : 1</p>	<i>Gametes</i>	<i>B</i>	<i>b</i>	<i>B</i>	<i>BB</i>	<i>Bb</i>	<i>b</i>	<i>Bb</i>	<i>bb</i>	<p>1</p> <p>1</p>
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33.	<p>Mention any four applications of the technology depicted in the figure.</p> <p>Ans. :</p> <ul style="list-style-type: none"> ★ Developing new varieties of plants to suit varying climatic conditions. ★ It is possible to improve taste or nutritional value among plant products. ★ Possible to equip the plants to cope better with diseases and pests. ★ Possible to make plant varieties to use water and nutrients more efficiently. ★ Possible to transfer nitrogen fixing bacteria into the cells of leguminous plants. ★ Possible to synthesis insulin hormone. ★ Process applicable in the production of antibiotics and clone. <p>(Other suitable points) (Any four)</p>	<p>$4 \times \frac{1}{2}$</p> <p>2</p>									



Qn. Nos.	Value Points	Total
38.	<p>Explain the structure and function of neuron.</p> <p style="text-align: center;">OR</p> <p>Epidermis plays an important role in the survival of a plant. Explain.</p> <p><i>Ans. :</i></p> <ul style="list-style-type: none"> ★ The part containing a prominent nucleus is the <i>cell body</i>. ★ The short projections arising from the cell body are called <i>dendrites</i>. ★ The long extension of the cell body is <i>axon</i>. ★ Axon ends with bunch of branches called <i>telodendrons</i>. ★ Axon is covered by a fatty sheath called <i>myelin sheath</i>. <p><i>Function :</i></p> <ul style="list-style-type: none"> ★ Irritability. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ★ Responds to external and internal stimuli. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ★ It transmits information in the form of nerve impulses from different parts of the body to the nerve centres. (any one) <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> ★ Protects the inner parts of the plant. ★ Participates in photosynthesis. ★ Prevents the plant from drying by reducing water loss through transpiration. ★ Helps in the absorption of water and nutrients. ★ Regulates the exchange of gases through stomata. 	<p style="text-align: center;">2</p> <p style="text-align: center;">1</p> <p style="text-align: center;">3</p>



Qn. Nos.	Value Points	Total
41.	<p>Draw a diagram showing the vertical section of human eyeball and label the following parts :</p> <p>(a) Cornea (b) Yellow spot.</p> <p>Ans. :</p>  <p>Figure — 3 Parts — $\frac{1}{2} + \frac{1}{2}$</p>	4

