



BIOLOGY

BOOKS - UNITED BOOK HOUSE

MODEL PAPER 2020



1. Select the correct pair-

A. Cerebrum-Maintenance of balance of the

body

B. Hypothalamus-Control of intelligence

and emotion

C. Cerebellum-Control of body temperature

D. Medulla Oblongata-Control of heart beat

and swallowing of food.

Answer:

2. Identify which of the following statements is not true regarding Insulin-

A. Helps in the absorption of glucose from

blood into most of the somatic cells

B. Converts glucose into glycogen within

liver and muscle cells

C. Helps in the conversion of fat and

protein into glucose

D. Inhibits the conversion of protein and

fat into glucose.

Answer:



3. Determine from the anwers given below in which phases of karyokinesis during mitotic cell division following two incidents happen-(A) Daughter chromosomes tend to move apart from each other towards their own poles (B) Nuclear membrane and nucleolus disappear

- A. (A)Prophase (B)Anaphase
- B. (A)Anaphase (B) Prophase
- C. (A) Telophase (B) Metaphase
- D. (A) Metaphase (B) Telophase

Answer:

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4. Select which of the following is the feature

of cross pollution-

A. Occurs within the same flower of the

same plant

B. Agents are not required

C. Lesser chance of new characters being

transmitted

D. More wastage of pollen grains.

Answer:

5. Determine the number of DNA molecules that get coiled to form each chromosome in a newly formed daughter cell produced by mitotic cell division in human body-

A. 46

B. 1

C. 23

D. Numerous.

Answer:





6. Identify the genotype of guineaping having

black colour and rough hair-

A. BbRr,BBRr

B. BBrr,Bbrr

C. bbRR,bbRr

D. bbrr,bbRr

Answer:

7. Decide which of the following two were selected by Mendel as recessive traits-

A. Colour of flower-purple,position of

flower-axial

B. Length of stem-dwarf, form of ripe seed-

wrinkled

C. Form of ripe seed-round, colour of seed-

yellow

D. Position of flower-axial, length of stem-

tall.

Answer:



8. Assess from the following, the probable genotype of parents having haemophilic son and normal daughter-

A. $H \mid |h,h| \uparrow$

 $\mathsf{B}.\,H\mid |H,\,H|\,\uparrow$

C. $H \mid |H, h| \uparrow$

D. $H \mid |h, H| \uparrow$

Answer:

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9. Parthenium is an exotic species in our country. Other indigenous species cannot survive in such places where it grows. This

establishes one of the postulates of Darwin's

theory. Identify the postulate-

A. Intraspecific struggle

B. Interspecific struggle

C. Struggle with environment

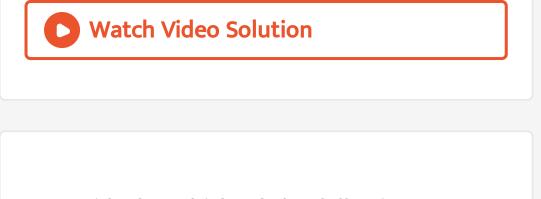
D. Origin of new species.

Answer:

10. Miller and Urey, in their experiment, were able to synthesize some preliminary constituents necessary for the creationb of life. Identify the ones which were amino acids among them-

- A. Lactic acid, Acetic acid
- B. Urea, Adenine
- C. Glycine, Alanine
- D. Formic acid, Acetic acid

Answer:



11. Decide for which of the following purpose bees demonstrate waggle dance-

A. Search for reproductive mates

B. Inform other worker bees about the

direction and the distance of the source

of food from the bee hive

C. Selecting place for the construction of

the new bee hive

D. Avoid attack by probale enemy.

Answer:

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12. Identify which of the following is the correct information related to biosphere reserve-

A. Conservation is promoted to local people and other biotic communities

along with conservatioon of ecosystem B. National Park ans Sanctuary are not included within biosphere reserve C. The presence and participation of local people for the conservation of ecosystem are not permissible D. It's size is usually smaller than a Sanctuary.

Answer:

13. Decide which of the following pair is not correct-

A. Poaching-Increase the endangeredness of gorillaB. Exotic species-Lantana, Tilapia

endemic species and endangered

C. Determination of hotspot-Number of

species

D. Greenhouse gas-Eutrophication.

Answer:



14. Decide which of the following Project Tiger is located within our state-

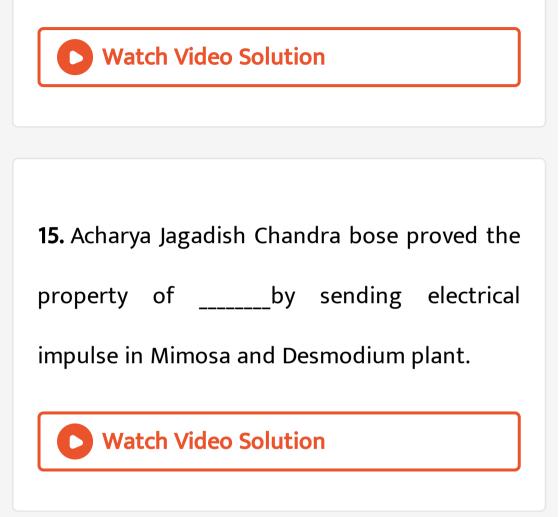
A. Bandipur

B. Simlipal

C. Sunderbans

D. Kanha.

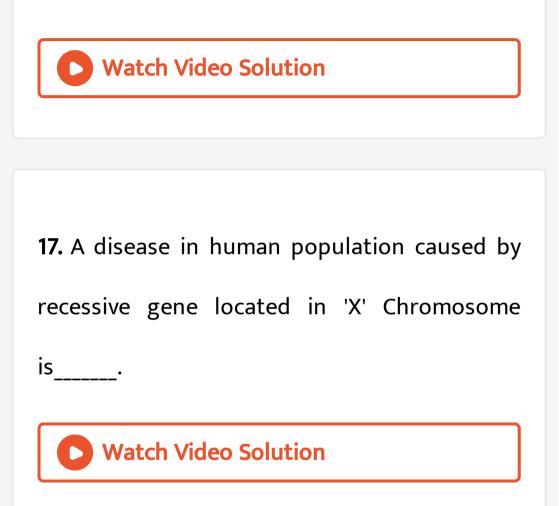
Answer:



16. If gametes in human were produced by mitosis insteead of meiosis then the number

of autosomes in a somatic cell of an offspring

would have been ____.



18. At the ____phase of nitrogen cycle ammmonia is converted into nitrite and nitrate by the action of some bacteria.



19. To produce the bottled cold drinks widely sold in the market, a lot of water is wasted.



20. Decide whether the following statements

are true or false

Tropic movement is the movement of growth

in plants.

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21. Decide whether the following statements

are true or false

Crossing over takes place during mitotic cell division.





22. Decide whether the following statementsare true or falseMendel used the term gene while describing

his experiments related with heredity,

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23. Decide whether the following statements are true or false

The leaf of Cactus is modified into spine for

the reduction of the rate of transpiration.



24. Decide whether the following statements

are true or false

Rhododendron is an endangered plant species

conseved in Eastern Himalaya hotspot.

25. Decide whether the following statements

are true or false

Choroid helps in the accommodation of eye by

changing the curvature and shape of the lens.



26. Choose the odd one and write it:

Cerebrum, Hypothalamus, Pons, Thalamus.

27. Where the Schwann cells are located?



28. A pair of related terms is given below. On the basis of the relationship in the first pair write the suitable word in the gap of second pair.

Mitosis : Radicle : Meiosis : _____

29. Which law Mendel concluded from his

dihybrid cross experiment?



30. Give an example of a variation found among healthy persons which is transmitted through generations.



31. How Chimpanzees break and open the hard

shells for eating the nuts?

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32. Among the following four terms, one includes the other three. Find it out and write it: SPM, Air Pollution, Green house gas, Lung disease.



33. Name the practice which jointly the local peoples and forest department maintain for reclamation of forest.



34. Distinguish between the functions of hormone and nervous system on the follwing parameters :

Nature of function

35. Distinguish between the functions of hormone and nervous system on the follwing parameters :

Pace of function

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36. Distinguish between the functions of hormone and nervous system on the follwing parameters :

Time span of function





37. Distinguish between the functions of hormone and nervous system on the follwing parameters :

Fate

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38. A person can see distant objects distinctly but is unable to visualize near object in a perfect way- Predict what would be the

probable cause and suggest the corrective

measure for such problem.



39. Analyse the role of synthetic plant hormone in increasing the production and solving the problem of weed in agriculture.



40. LH and ICSH control the secretion of hormones of reproductive glands of human body-judge the validity of the statement.



41. How can one distinguish between mitosis of plant cells and that of animal cells on the basis of formation of spindle fibre and the process of cytokinesis?



42. Establish the relationship between the formaton of malignant tumour in human body with the loss of control in the cell cycle.



43. The adventitious leaf bud plays significant role in natural vegetative propagation of plant-Evaluate the validity of the statement with a proper example.



44. Show with the help of a cross who is more important among parents in determing the sex of their offspring.

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45. Different genotypes produce the same phenotype - Justify the statement in the form a table by taking an example from the result of dihybid cross of pea plant.



46. Give your opinion abouyt probale suggestions which can be given to a pair of contenders before marriage in order to prevent the spread of a genetic disease from the society already known to you.

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47. A good number of Tilapia fishes are released in a pond having only different

indigenous fish species grown naturally. Think

and write which type of struggle for existence

Tilapia fishes have to face survive.

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48. Prepare a list of roles air sacs of pigeon play to fly in the air.

49. Structure and function

Indicating the nature of evolution

Based on the above two features establish the

concept of analogous organ with the help of

proper example.

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50. Relate the following phenomena with the

trend of disturbance in Nitrogen Cycle

resulting from different human activities:

Global warming



51. Relate the following phenomena with the trend of disturbance in Nitrogen Cycle resulting from different human activities:

Acidification of soil and water or river and lake



52. Hilsa, Bee, Penguin, Rauwolfia - Assesse which are the causes of endangered of the above-mentioned organisms.



53. Discuss any two roles of People's Biodiversity Register (PBR) in conserving local biodiversity.

54. Tabulate any of the four activities which are prohibited in a sactuary following the provisins of Wildlife Act.

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55. Draw a neat diagram of the vertical section

of the eyeball of human eye and label the

following part:

Chromatid

56. Draw a neat diagram of the vertical section of the eyeball of human eye and label the

following part:

Cornea, lens, vitreous chamber, optic nerve.

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57. Draw a neat diagram of the vertical section

of the eyeball of human eye and label the

following part:

Aqueous Chamber, fovea.



58. Draw a neat diagram of the vertical section

of the eyeball of human eye and label the

following parts:

Vitreous Chamber, Aqueous Chamber.

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59. Write one function for the following part

of the human eyeball:

Vitreous humor



60. Write one function for the following part

of the human eyeball:

Sclera



61. Write one function for the following part of

the human eyeball:

Iris





62. Write one function for the following part

of the human eyeball:

Lens

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63. Write one function for the following part

of the human eyeball:

Retina

64. Write three features of the metaphase stage and two features of the anaphase stage of mitotic cell division in animal cell.

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65. Distinguish between mitotic and meiotic cell divisions in animals on the basis of following feature: -

Site of occurrence



66. Distinguish between mitotic and meiotic cell divisions in animals on the basis of following feature: -

Number of Chromosomes



67. Distinguish between mitotic and meiotic cell divisions in animals on the basis of

following feature: -

Number of cells produced



68. Explain the importance of following parts

of an eukaryotic chromosome :

Centromere

Analyse the role of cell divisions in controlling

growth, reproduction and repair in an

organism.



69. Explain the importance of following parts of an eukaryotic chromosome :

Telomere

Analyse the role of cell divisions in controlling

growth, reproduction and repair in an organism.

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70. Tabulate three pairs of dominant-recessive

traits of pea plant as selected by Mendel. State

the first law of Mendel as deducted from the

experiment of Monohybrid cross.



71. A colour blind female married a normal male. Judge the probability of colour blindness among their children.



72. With the help of arrow signs, show the major evolutionary events as occurred gradually after the origin of life.



73. Discuss the following events as mentioned

in the evolutionary theory of Darwin:

Prodigality of production

Adaptation is the change of shape, physiological functions and behaviour of organism'-Justify the statement with the help

of any two examples.



74. Discuss the following events as mentioned in the evolutionary theory of Darwin:
Origin of variation
Adaptation is the change of shape, physiological functions and behaviour of organism'-Justify the statement with the help of any two examples.





75. Discuss the following events as mentioned in the evolutionary theory of Darwin:
Natural selection
Adaptation is the change of shape, physiological functions and behaviour of organism'-Justify the statement with the help of any two examples.

76. Evaluate the effects of following pollutants

on environment and human health:

Non-biodegradable insecticides



77. Evaluate the effects of following pollutants

on environment and human health:

Pollen grain

78. Evaluate the effects of following pollutants

on environment and human health:

Chemical fertilizers containing phosphate and

nitrate



79. Evaluate the effects of following pollutants

on environment and human health:

Wastes-containing pathogens originated from

health centres



80. Evaluate the effects of following pollutants

on environment and human health:

Chlorofluorocarbon

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81. Speculate the probable causes of the following phenomena:

Insomnia, High blood pressure, Partial or

Complete deafness.





82. Speculate the probable causes of the following phenomena:

Decrease in the concentration of dissolved

oxygen in water and floating of dead fishes.



83. Speculate the probable causes of the following phenomena:

Decreases in the number of Crocodiles



84. Speculate the probable causes of the

following phenomena:

Inflammation in the respirtory tract of lung



85. Speculate the probable causes of the following phenomena:

Decrease in the number of pollinating insects.





86. The ever-increasing population in the different cities of India is creating the crisis of groundwater-Support the statement .

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87. Discuss the role of biodiversity in maintaining the balance of the ecosystem

88. Select the correct pair-

A. Cerebrum-Maintenance of balance of the

body

B. Hypothalamus-Control of intelligence

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- C. Cerebellum-Control of body temperature
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Answer:



90. Determine from the anwers given below in which phases of karyokinesis during mitotic cell division following two incidents happen-(A) Daughter chromosomes tend to move apart from each other towards their own poles (B) Nuclear membrane and nucleolus

disappear

A. (A)Prophase (B)Anaphase

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C. (A) Telophase (B) Metaphase

D. (A) Metaphase (B) Telophase

Answer:

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Answer:



92. Determine the number of DNA molecules that get coiled to form each chromosome in a newly formed daughter cell produced by mitotic cell division in human body-

A. 46

B. 1

C. 23

D. Numerous.

Answer:



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A. BbRr,BBRr

B. BBrr,Bbrr

C. bbRR,bbRr

D. bbrr,bbRr

Answer:



94. Decide which of the following two were selected by Mendel as recessive traits-

A. Colour of flower-purple,position of

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B. Length of stem-dwarf, form of ripe seed-

wrinkled

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D. Greenhouse gas-Eutrophication.

Answer:



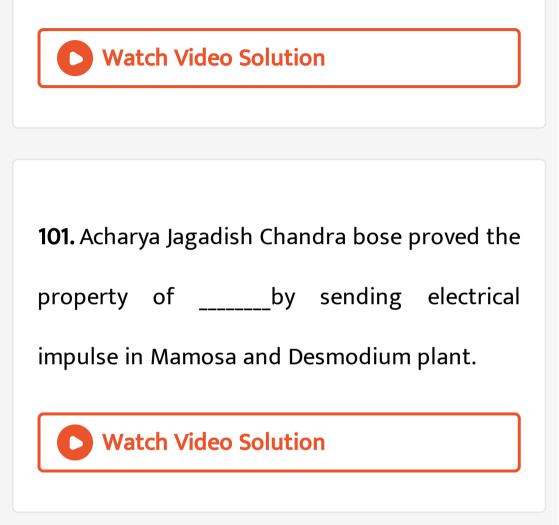
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B. Simlipal

- C. Sunderbans
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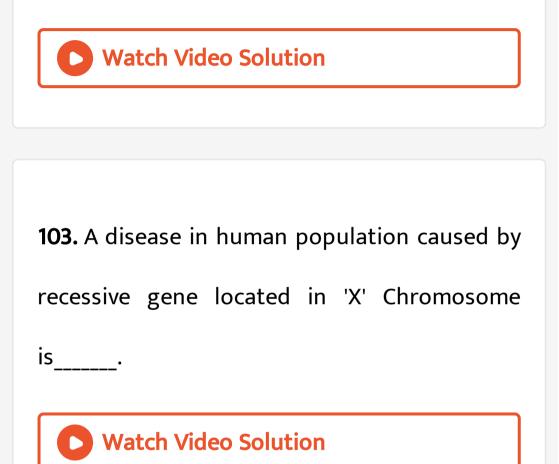
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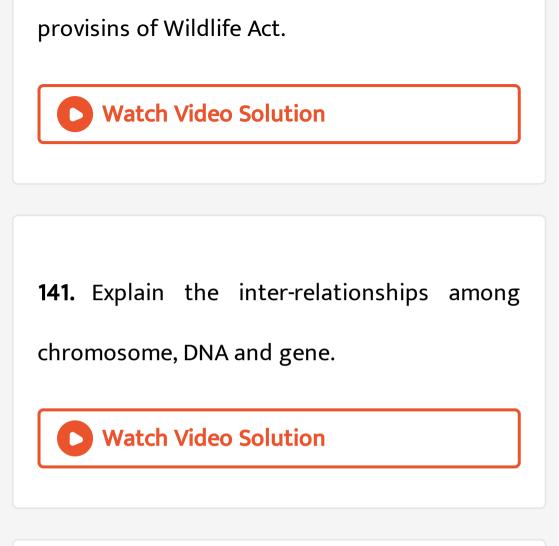
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of eye-ball of human and label the following

parts:

Cornea, Retina, Vitrious humor, Lens.



143. Write one function for the following part

of the human eyeball:

Vitreous humor



144. Write one function for the following part

of the human eyeball:

Sclera



145. Write one function for the following part

of the human eyeball:

Iris

146. Write one function for the following part

of the human eyeball:

Lens



147. Write one function for the following part

of the human eyeball:

Retina

148. Write three features of the metaphse stage and two features of the anaphse stage of mitotic cell divition in animal cell.

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149. Distinguish between mitotic and meiotic cell divisions in animals on the basis of following feature: -

Site of occurrence

list the changes in sense organs and bones

occurred during the senescence phase of

human development.



150. Distinguish between mitotic and meiotic cell divisions in animals on the basis of following feature: -

Nature of division of Chromosomes

list the changes in sence organs and bones ocurred during the senescence phase of human development.





151. Distinguish between mitotic and meiotic cell divisions in animals on the basis of following feature: -Number of cells produced list the changes in sence organs and bones ocurred during the senescence phase of

human development.



152. Explain the importance of following parts

of an eukaryotic chromosome :

Centromere

Analyse the role of cell divisions in controlling

growth, reproduction and repair in an

organism.

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153. Explain the importance of following parts

of an eukaryotic chromosome :

Telomere

Analyse the role of cell divisions in controlling

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organism.



154. Tabulate three pairs of dominantrecessive traits of pea plant as selected by Mendel. State the first law of Mendel as deducted from the experiment of Monohybrid



cross.



155. Show with the help of a cross how the first

law of Mendel is deviated in the case of Four-

O'clock plant in F_2 generation.

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157. Discuss the following events as mentioned in the evolutionary theory of Darwin:
Prodigality of production
Adaptation is the change of shape, physiological functions and behaviour of organism'-Justify the statement with the help of any two examples.

158. Discuss the following events as mentioned in the evolutionary theory of Darwin: Origin of variation Adaptation is the change of shape, physiological functions and behaviour of organism'-Justify the statement with the help of any two examples.

159. Discuss the following events as mentioned in the evolutionary theory of Darwin: Natural selection Adaptation is the change of shape, physiological functions and behaviour of organism'-Justify the statement with the help of any two examples.

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160. Explain Non-biodegradable wastes





161. Explain the effect of Pollen grain on

health.



162. Evaluate the effects of following pollutants on environment and human health:Chemical fertilizers containing phosphate and nitrate

163. Evaluate the effects of following pollutants on environment and human health: Wastes-containing pathogens originated from health centres

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164. Evaluate the effects of following pollutants on environment and human health:Chlorofluorocarbon





165. Speculate the probable causes of the following phenomena:

Insomnia, High blood pressure, Partial or

Complete deafness.



166. Speculate the probable causes of the following phenomena:

Decrease in the concentration of dissolved

oxygen in water and floating of dead fishes.



167. Speculate the probable causes of the

following phenomena:

Decreases in the number of Crocodiles

168. Speculate the probable causes of the

following phenomena:

Inflammation in the respirtory tract of lung



169. Speculate the probable causes of the following phenomena:

Decrease in the number of pollinating insects.



170. how the increasing in human habitat in

influencing the ecosystem of Sundarbans.



171. How can the prevailing rate of species extinction be declined by 30% solely through protection of biodiversity hotspots?

