



BIOLOGY

BOOKS - KVPY PREVIOUS YEAR

MOCK TEST 3

Exercise

1. In a species, the weight of newborn ranges from 2 to 5 kg. 97% of the newborn with an average weight between 3 to 3.3 kg survive

whereas 99 of the infants born with weights from 2 to 2.5 or 4.5 to 5 kg die. Which type of selection process is taking place?

- A. Directional selection
- B. Stabilising selection
- C. Disruptive selection
- D. Cyclical selection

Answer:



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2. Match the columns and identify the correct option.

Column-I	Column-II
A. Thylakoids	I. Disc-shaped sacs in Golgi apparatus
B. Cristae	II. Condensed structure of DNA
C. Cisternae	III. Flat membranous sacs in stroma
D. Chromatin	IV. Infoldings in mitochondria

A. A-III,B-IV,C-I,D-II

B. A-III,B-I,C-IV,D-II

C. A-III,B-IV,C-II,D-I

D. A-IV,B-III,C-I,D-II

Answer:



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3. How many fragments will be generated if you digest a linear DNA molecule with a restriction enzyme having three recognition sites?

A. 3

B. 4

C. 5

D. 6

Answer:



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4. Genes A and B are farther apart than are genes A and C, and all three are linked. Which of the followings cannot be concluded?

A. B' might be between 'A' and 'C'.

B. C' might be between 'A' and 'B'.

C. More crossovers will occur between 'A' and 'B' than between 'A' and 'C'.

D. Both (a) and (b)

Answer:



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5. Match column-I with column-II and select the correct option using the codes.

	Column-I		Column-II
A.	Autosomal recessive trait	I.	Down's syndrome
B.	Sex-linked recessive trait	II.	Phenylketonuria
C.	Metabolic error linked to autosomal recessive	III.	Haemophilia
D.	Additional 21 st chromosome	IV.	Sickle cell anaemia

A. A-II,B-I,C-IV,D-III

B. A-IV,B-I,C-II,D-III

C. A-IV,B-III,C-II,D-I

D. A-III,B-IV,C-I,D-II

Answer:



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6. If the protein hormone insulin from several mammalian species has similar activity in regulating sugar metabolism when injected into another species, which of the following is most appropriate?

A. Primary structures of insulin from different species are identical.

B. Somewhat different amino acid sequences may yield similar 3-

dimensional conformations.

C. Three-dimensional conformation has little relation to biological activity.

D. None of these

Answer:



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7. Which of the following findings derived from recent analysis of the human genome does

not illustrate our genetic relationships to other, more "primitive" organisms?

A. Only 35,000 genes are required to make a human.

B. Human DNA contains hundreds of bacterial genes.

C. Numerous homeotic genes are shared among humans and other animals.

D. There are over 40 newly identified disease genes.

Answer:



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8. The type of connective tissue that is associated with the umbilical cord is

- A. Areolar connective tissue
- B. Jelly-like connective tissue
- C. Adipose connective tissue
- D. Reticular connective tissue

Answer:



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9. Apomictic embryos in citrus arise from

A. Synergids

B. Maternal sporophytic tissue in ovule

C. Antipodal cells

D. Diploid egg

Answer:



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10. The telomeres of eukaryotic chromosomes consist of short sequences of

- A. Adenine-rich repeats
- B. Guanine-rich repeats
- C. Thymine-rich repeats
- D. Cytosine-rich repeats

Answer:



11. A drug is given to an animals that completely blocks the absorption of nutrients within the digestive system.Which of the following structures is most severely impacted by this treatment?

- A. Intestine
- B. Buccal cavity
- C. Crop
- D. Stomach

Answer:



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12. Contribution of Ingenhousz in elucidation of process of photosynthesis is that

A. only green parts of plants exposed to light can convert four air (CO_2) into pure air (O_2).

B. green plants convert light energy into chemical energy

C. plants have the capacity to purify foul air.

D. sunlight is the ultimate source of energy for plants and animals.

Answer:



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13. Which of the following is related to obesity low plasma Na^+ high K^+ and increased blood pressure

A. Growth hormone

B. Cortisol

C. Thyroxine

D. Adrenaline

Answer:



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14. E. coli cells with a mutated z gene of the lac operon cannot grow in medium containing only lactose as the source of energy because

A. the lac operon is constitutively active in these cells.

B. they cannot synthesise functional beta-galactosidase.

C. in the presence of glucose, E. coli cells do not utilise lactose.

D. they cannot transport lactose from the medium into the cell.

Answer:



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15. The ultimate gain of light reaction is :

A. *ATP & NADPH₂*

B. NADPH₂'

C. Only ATP

D. *Only* O_2

Answer:



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16. Ploidy level of Nucellus, endosperm, polar nuclei , Megaspore mother cell, female gametophyte respectively are:

A. $2n, 3n, n, 2n, n$

B. $2n, 3n, 2n, n, n$

C. $n, 2n, n, 2n, n$

D. $2n, 3n, 2n, 2n, n$

Answer:



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17. Jaundice is yellowing of the skin due to accumulation of bilirubin and/or other products of haemoglobin breakdown. Bilirubin is formed in the blood but is further transformed by the liver and excreted in the

bile. Which of the following is not a cause of jaundice?

- A. Excessive fragility of RBC
- B. Hepatitis and gall stones.
- C. Cancer of pancreas
- D. None of the above

Answer:



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18. Which of the following gene clusters in bacteria is responsible for nitrogen fixation ?

A. nod,nif

B. nod,nfx

C. nod,nix

D. ndx,nif

Answer:



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