

CUET UG 2023 Biology Question Paper PDF (Jun 05, 2023) (Shift 3)

Q1. The probability of having a haemophilia carrier daughter by a haemophilia carrier mother and a normal father is:

- (a) 100%
- (b) 50%
- (c) 25%
- (d) 75%

Q2. Arrange the stages of oogenesis in order of their occurrence.

- (A) Formation of ovum & IInd polar body
- (B) Meiosis II begins but held at Metaphase II
- (C) Meiosis I started but held at Prophase I
- (D) Formation of primary oocyte from oogonia
- (E) Completion of Meiosis-I and formation of secondary oocyte and first polar body

Choose the correct answer from the options given below:

- (a) (D), (C), (B), (E), (A)
- (b) (C), (E), (D), (A), (B)
- (c) (D), (C), (E), (B), (A)
- (d) (D), (C), (A), (E), (B)

Q3. A mature embryo sac of an angiosperm is:

- (a) 7 nucleate, 7 celled
- (b) 8 nucleate, 7 celled
- (c) 6 nucleate; 7 celled
- (d) 4 nucleate, 7 celled

Q4. Who proposed the concept 'saltation' in evolution?

- (a) Thomas Malthus
- (b) Charles Darwin
- (c) Hugo deVries
- (d) Ernst Haeckel

Q5. Arrange the following steps of sewage treatment in a sequential order.

- (A) Primary effluent passed in aeration tank
- (B) Activated sludge is formed
- (C) Filtration and sedimentation of sewage
- (D) Aerobic microbes grow into flocs

Choose the **correct** answer from the options given below:

- (a) (D), (C), (A), (B)
- (b) (A), (D), (C), (B)
- (c) (C), (A), (D), (B)
- (d) (A), (D), (B), (C)

Q6. The finches found on Galapagos Islands were originally _____.

- (a) Insectivores

- (b) Fruit eaters
- (c) Fish eaters
- (d) Seed eaters

Q7. 'Hisardale' a new breed of sheep developed in Punjab by:

- (a) In-breeding
- (b) Out-crossing
- (c) Cross-breeding
- (d) Out-breeding

Q8. Which of the following is an example of auto-immune disease?

- (a) Rheumatoid arthritis
- (b) Malaria
- (c) Elephantiasis
- (d) Amoebiasis

Q9. If the solar energy available to a particular ecosystem is 1,000,000 J. What will be the energy available at 2nd trophic level in the food chain?

- (a) 100 kJ
- (b) 10 kJ
- (c) 1 kJ
- (d) 0.1 kJ

Q10. The Verhulst - Pearl Logistic Growth of population is characterised by:

- (a) Straight line curve
- (b) Sigmoid curve
- (c) J-shaped curve
- (d) L-shaped curve

Q11. Match List-I with List-II:

List-I		List-II	
(A)	Somaclone	(I)	Pomato
(B)	Totipotency	(II)	Virus free regions in plant
(C)	Meristem	(III)	Genetically identical to original plant used in tissue culture
(D)	Somatic hybrid	(IV)	Stem cells

Choose the **correct** answer from the options given below:

- (a) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
- (b) (A)-(I), (B)-(IV), (C)-(II), (D)-(III)
- (c) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)
- (d) (A)-(I), (B)-(III), (C)-(II), (D)-(IV)

Q12. Match **List-I** with **List-II**:

List-I		List-II	
(A)	Cloning vector	(I)	Sea weeds
(B)	β -galactosidase	(II)	Selectable marker
(C)	Agarose	(III)	Ti-plasmid of <i>Agrobacterium tumifaciens</i>
(D)	amp ^R in pBR322	(IV)	Chromogenic screening

Choose the **correct** answer from the options given below:

- (a) (A)-(I), (B)-(III), (C)-(II), (D)-(IV)
- (b) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)
- (c) (A)-(I), (B)-(IV), (C)-(II), (D)-(III)
- (d) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

Q13. Use of biofertilizers as a nutrient source is a practised in _____.

- (a) Inorganic farming
- (b) Animal husbandry
- (c) Organic farming
- (d) Crop rotation

Q14. Examples of Ex-situ conservation are:

- (A) Botanical gardens
- (B) Sacred grooves
- (C) Hot spots
- (D) Zoological parks

Choose the **correct** answer from the options given below:

- (a) (A) and (B) Only
- (b) (A) and (D) only
- (c) (B) and (C) only
- (d) (C) and (D) only

Q15. The gene controlling the ABO blood groups in humans is:

- (a) A
- (b) B
- (c) I
- (d) O

Q16. 'Barnacles' growing on the back of whale is a classical example of:

- (a) Mutualism
- (b) Predation
- (c) Amensalism
- (d) Commensalism

Q17. Identify the statements which hold true for transgenic animals.

- (A) Transgenic animals can be used to study vaccine safety.
- (B) Over 95% of transgenic animals are mice
- (C) Transgenic animals cannot be used to study human diseases

(D) Transgenic animal possesses and express foreign gene

Choose the correct answer from the options given below:

- (a) (A), (B) and (C) only
- (b) (A), (B) and (D) only
- (c) (B), (C) and (D) only
- (d) (A), (C) and (D) only

Q18. Select the properties of cancer cell

- (A) Forms benign tumors
- (B) Causes very little damage to the surrounding tissues
- (C) Can show Metastasis
- (D) Lacks contact inhibition

Choose the correct answer from the options given below:

- (a) (A), (D) only
- (b) (B), (C), (D) only
- (c) (A), (B), (C) only
- (d) (A), (C), (D) only

Q19. In plants, continued self-pollination results in

- (a) Outcrossing
- (b) Inbreeding depression
- (c) Self-incompatibility
- (d) Male sterility

Q20. The first clinical gene therapy was given to treat:

- (a) Thalassaemia
- (b) Haemophilia
- (c) Adenosine deaminase deficiency
- (d) Turner's Syndrome

Q21. In biolistic method, the cells are bombarded with high velocity microparticles of:

- (a) DNA coated with gold or tungsten
- (b) Gold or tungsten coated with DNA
- (c) Platinum or copper coated with DNA
- (d) Copper or iron coated with DNA

Q22. Which of the following does not show parthenogenesis?

- (a) Honeybees
- (b) Turkey
- (c) Rotifers
- (d) Snakes

Q23. Wings of an insect and wings of a bird are:

- (a) Homologous organs
- (b) Analogous organs
- (c) Vestigial organs
- (d) Over specialised organs

Q24. Snow-blindness happens when a person is exposed to _____.

- (a) Extreme cold
- (b) Snow blizzard
- (c) High UV-B dose
- (d) X-rays

Q25. Match List-I with List-II:

List-I		List-II	
(A)	Thalassaemia	(I)	Absence of one X chromosome
(B)	Phenylketonuria	(II)	Inborn error of metabolism
(C)	Down's Syndrome	(III)	Autosomal recessive blood disease
(D)	Turner's Syndrome	(IV)	Presence of an additional copy of the 21 st chromosome

Choose the **correct** answer from the options given below:

- (a) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
 (b) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
 (c) (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
 (d) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)

Q26. Match List-I with List-II:

List-I (Name of the plant)		List-II (Name of modifications)	
(A)	<i>Bryophyllum</i>	(I)	Offset
(B)	<i>Agave</i>	(II)	Bulbil
(C)	Ginger	(III)	Leaf buds
(D)	Water hyacinth	(IV)	Rhizome

Choose the **correct** answer from the options given below:

- (a) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)
 (b) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
 (c) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
 (d) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)

Q27. Which enzyme is used as a 'clot buster'?

- (a) Staphylokinase
 (b) Glucokinase
 (c) Streptokinase
 (d) Protease

Q28. A double stranded DNA fragment has 500 Adenine bases. If total number of base pairs in this fragment is 2500, then what will be the number of guanine bases?

- (a) 500
 (b) 750
 (c) 1000
 (d) 2000

Q29. Arrange the following steps of rDNA technology in correct sequence.

- (A) Amplification of gene by PCR
 (B) Insertion of rDNA into host cell using vector
 (C) Isolation of the genetic material from the cell
 (D) Cutting the DNA at specific location

Choose the **correct** answer from the options given below:

- (a) (C), (D), (B), (A)
 (b) (C), (D), (A), (B)
 (c) (D), (C), (A), (B)
 (d) (A), (C), (D), (B)

Q30. Some of the fresh water fishes commonly found in India are:

- (A) *Hilsa*
 (B) Pomfrets
 (C) *Catla*
 (D) *Rohu*
 (E) Common carp

Choose the **correct** answer from the options given below:

- (a) (A), (B), (C) and (E) only
 (b) (B), (C) and (D) only
 (c) (A), (B), (C) and (D) only
 (d) (C), (D) and (E) only

Q31. Which of the following hormone is generally not produced by the placenta?

- (a) hCG
 (b) hPL
 (c) Thyroxin
 (d) Estrogen

Q32. Read the following and select the set of correct statements.

- (A) Euchromatin is transcriptionally inactive
 (B) Heterochromatin is more densely packed
 (C) Heterochromatin is loosely packed
 (D) Euchromatin is transcriptionally active
 (E) Euchromatin stains lighter

Choose the correct answer from the options given below:

- (a) (A) and (B) only
 (b) (B) and (D) only
 (c) (D) and (E) only
 (d) (B), (D) and (E) only

Q33. Match List-I with List-II:

List-I (Disease)		List-II (Pathogen)	
(A)	Amoebiasis	(I)	<i>Trichophyton</i>
(B)	Ascariasis	(II)	<i>Entamoeba histolytica</i>
(C)	Elephantiasis	(III)	Round worm
(D)	Ring Worms	(IV)	<i>Wuchereria</i>

Choose the **correct** answer from the options given below:

- (a) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
 (b) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)
 (c) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
 (d) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)

Q34. The association of Glomus with roots of higher plants is known as _____.

- (a) Mycorrhiza
- (b) Rhizobium
- (c) Azotobacter
- (d) Oscillatoria

Q35. Match **List-I** with **List-II**:

List-I		List-II	
(A)	Barrier	(I)	Prevents physical contact between ovum and sperm
(B)	IUD	(II)	Sterilization
(C)	Surgical Methods	(III)	Saheli
(D)	Oral Contraceptives	(IV)	Increase phagocytosis of sperms and suppress sperm motility

Choose the **correct** answer from the options given below:

- (a) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)
- (b) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
- (c) (A)-(IV), (B)-(I), (C)-(III), (D)-(II)
- (d) (A)-(I), (B)-(IV), (C)-(II), (D)-(III)

Q36. Haemophilia is a

- (a) Sex linked dominant disorder
- (b) Sex linked recessive disorder
- (c) Autosome linked dominant disorder
- (d) Autosome recessive disorder

Q37. Which of the following is **NOT** a sexually transmitted disease?

- (a) Syphilis
- (b) AIDS
- (c) Filariasis
- (d) Gonorrhoea

Q38. 'Polyblend' is a product made by Ahmed Khan. It is a:

- (a) Herbal pesticide
- (b) Biodegradable plastic
- (c) Fine powder of recycled modified plastic
- (d) A type of biofuel

Q39. Secondary productivity is:

- (a) Measured by organic matter produced.
- (b) Rate of formation of new organic matter by producers.
- (c) Rate of formation of new organic matter by consumers.
- (d) Always greater than primary productivity.

Q40. Match **List-I** with **List-II**:

List-I (Name of the Extinct Animal)		List-II (Name of the country)	
(A)	Stellar Sea Cow	(I)	Mauritius
(B)	Dodo	(II)	Africa
(C)	Thylacine	(III)	Russia
(D)	Quagga	(IV)	Australia

Choose the **correct** answer from the options given below:

- (a) (A)-(II), (B)-(I), (C)-(III), (D)-(IV)
- (b) (A)-(III), (B)-(I), (C)-(II), (D)-(IV)
- (c) (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
- (d) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

Q41.

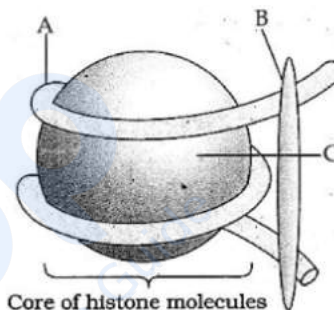


Figure showing packaging Of DNA Helix. Observe the figure and answer the following questions.

The number of base pairs (bp) in a typical nucleosome of DNA helix is:

- (a) 100 bp
- (b) 200 bp
- (c) 500 bp
- (d) 1000 bp

Q42.

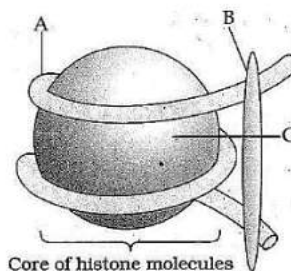
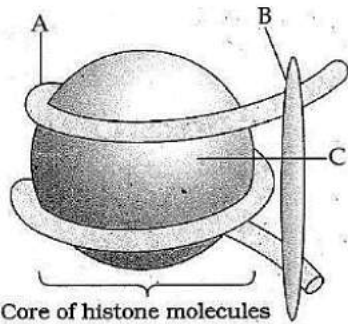


Figure showing packaging Of DNA Helix. Observe the figure and answer the following questions.

The basic amino acid residues present in abundance in histones are:

- (a) Methionine and Alanine
- (b) Tryptophan and Cysteine
- (c) Lysine and Arginine
- (d) Alanine and Cysteine

Q43.



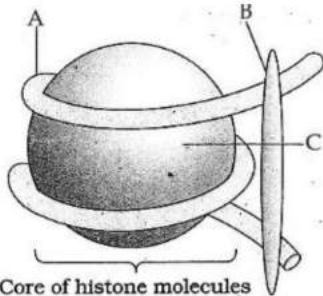
Core of histone molecules

Figure showing packaging of DNA Helix. Observe the figure and answer the following questions.

Which part of the nucleosome is positively charged?

- (a) Histone octamer
- (b) Chromatin
- (c) DNA
- (d) Heterochromatin

Q44.



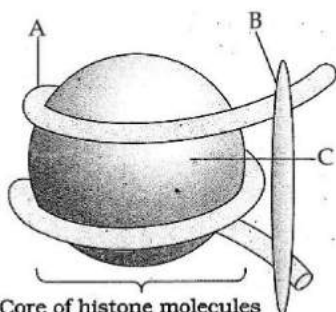
Core of histone molecules

Figure showing packaging of DNA Helix. Observe the figure and answer the following questions.

Identify the labels A, B and C in the given figure

- | | | | |
|-----|---------------------|---------------------|---------------------|
| (a) | (A) HI histone | (B) DNA | (C) Histone octamer |
| (b) | (A) DNA | (B) HI histone | (C) Histone octamer |
| (c) | (A) Histone octamer | (B) DNA | (C) HI histone |
| (d) | (A) DNA | (B) Histone octamer | (C) HI histone |

Q45.



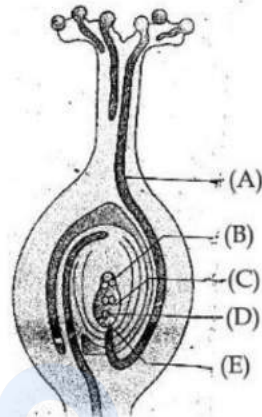
Core of histone molecules

Figure showing packaging of DNA Helix. Observe the figure and answer the following questions.

The region in prokaryotic cell whose DNA is organised in large loops held by proteins is called:

- (a) Nuclein
- (b) Nucleic region
- (c) Nucleus
- (d) Nucleoid

Q46.

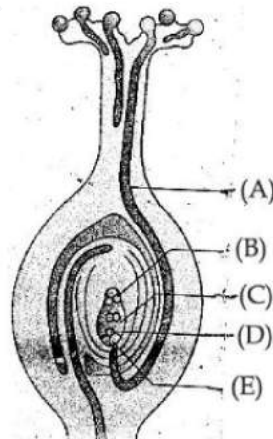


The figure given above shows the growth of pollen tube. Observe the figure and answer the following question.

The function of filiform apparatus is to:

- (a) Help in germination of pollen grains
- (b) Guide the entry of pollen tube into ovule
- (c) Help in the development of embryo
- (d) Formation of male gametes

Q47.

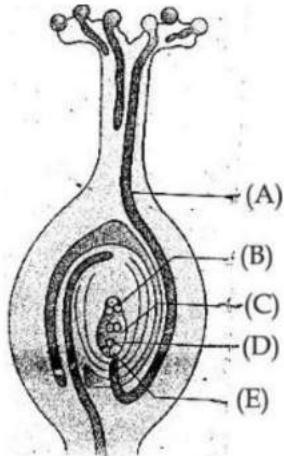


The figure given above shows the growth of pollen tube. Observe the figure and answer the following question.

The ploidy of parts (D) and (E) are:

- | | |
|------------|--------|
| (a) (D)-n | (E)-2n |
| (b) (D)-2n | (E)-n |
| (c) (D)-n | (E)-n |
| (d) (D)-n | (E)-3n |

Q48.

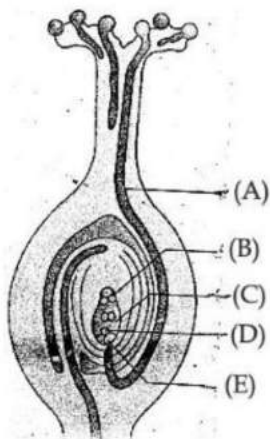


The figure given above shows the growth of pollen tube. Observe the figure and answer the following question.

Identify the part (A) and (B).

- (a) Pollen tube and synergids respectively
- (b) Synergids and female gamete respectively
- (c) Pollen tube and antipodal cells respectively
- (d) Pollen tube and female gamete respectively

Q49.

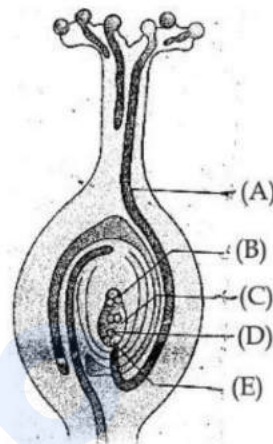


The figure given above shows the growth of pollen tube. Observe the figure and answer the following question.

The site of germination of pollen grains is:

- (a) Stigma
- (b) Ovary
- (c) Style
- (d) Embryo sac

Q50.



The figure given above shows the growth of pollen tube. Observe the figure and answer the following question.

Triple fusion takes place when:

- (a) One male gamete fuses with the one female gamete
- (b) Two male gametes with the egg nucleus
- (c) One female gamete fuses with the polar nuclei
- (d) One male gamete fuses with the polar nuclei