

CUET UG 2023 Biology Question Paper PDF (May 30, 2023) (Shift 1)

- Q1.** Which one of the following is NOT a correct feature of *Home erectus*?
- they had large brain around 900 cc.
 - their fossils were discovered in Java in 1891.
 - they used hides to protect their body and bury their dead.
 - they lived about 1.5 million years ago.
- Q2.** While developing purelines, increased homozygosity results in _____.
- production of superior male only
 - aggregation of harmful recessive genes
 - accumulation of superior genes
 - increased fertility
- Q3.** In rotifers and honey bees, the formation of new organism takes place without fertilization. This phenomenon is called _____.
- apomixis
 - parthenocarpy
 - parthenogenesis
 - embryogenesis
- Q4.** Which of the following is a bacterial disease?
- Small pox
 - Typhoid
 - Measles
 - Polio
- Q5.** The hormone which acts on the uterine muscle and causes stronger uterine contractions is known as:
- Testosterone
 - Progesterone
 - FSH
 - Oxytocin
- Q6.** Select the incorrect statement/s from the following -
- In human male, the testes are situated outside the abdominal cavity within a pouch.
 - Primary spermatocytes undergo mitosis to form secondary spermatocytes.
 - Sertoli cells provide nutrition to the germ cells.
 - Seminal plasma is rich in glucose, calcium and certain enzymes.
- Choose the **correct** answer from the options given below:
- (B) only
 - (B) and (C) Only
 - (B) and (D) only
 - (A) and (B) only
- Q7.** Which Of the following statements are **incorrect**?
- In bacteria, Bt toxin exists as inactive protoxin

- Due to alkaline pH in the gut, the toxin is converted into its active form
- The toxin is already present in active form in bacteria
- The inactive toxin binds to the surface of midgut and causes cell swelling and lysis.

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

- (A) and (D) Only
- (B) and (C) only
- (A) and (B) Only
- (C) and (D) only

- Q8.** The process of copying the genetic information from one strand of DNA to RNA is termed as:

- Translation
- Transcription
- Transportation
- Transition

- Q9.** Match List-I with List-II:

List-I		List-II	
(A)	Australian marsupials	(I)	Homologous organs
(B)	Wings of butterfly and wings of a bird	(II)	Natural selection
(C)	Industrial melanism	(III)	Adaptive radiation
(D)	Forelimbs of Horse and Bat	(IV)	Analogous organs

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

- (A)-(I), (B)-(II), (C)-(IV), (D)-(III)
- (A)-(III), (B)-(IV), (C)-(II), (D)-(I)
- (A)-(II), (B)-(I), (C)-(III), (D)-(IV)
- (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

- Q10.** Embryological support for evolution was disapproved by _____.

- Alexander Von Humboldt
- Paul Ehrlich
- Karl Ernst Von Baer
- Hugo deVries

- Q11.** The sickle cell anaemia is a

- Sex linked recessive disease
- Autosomal recessive disease
- Sex linked dominant disease
- Autosomal dominant disease

- Q12.** The presence of additional copy of X chromosome in humans lead to
 (a) Down's Syndrome
 (b) Klinefelter's Syndrome
 (c) Turner's Syndrome
 (d) Thalassemia

- Q13.** The mass of living organisms at a particular time at each trophic level is called _____.
 (a) Carrying capacity
 (b) Standing state
 (c) Standing crop
 (d) Gross primary productivity

- Q14.** Match **List-I** with **List-II**:

List-I		List-II	
(A)	Sea anemone and the clown fish	(I)	<i>Competition</i>
(B)	Tiger and the deer	(II)	<i>Predation</i>
(C)	Flamingoes and resident fishes in south American lakes	(III)	<i>Commensalism</i>
(D)	Mycorrhizae	(IV)	<i>Amensalism</i>
		(V)	<i>Mutualism</i>

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

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

- Q15.** Which of the following is a hormone releasing IUD?

- (a) CuT
 (b) Cu7
 (c) LNG-20
 (d) Multiload 375

- Q16.** Select the correct statement/ s about sporopollenin found in pollen grain.

- (A) The hard outer layer of pollen grains is made up of sporopollenin.
 (B) It is one of the most resistant organic materials known.
 (C) It does not withstand high temperature and strong acids.
 (D) No enzyme can degrade it.

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

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

- Q17.** The ability of some snails and fish to avoid summer related problems like heat and dessication is called _____.

- (a) Hibernation
 (b) Aestivation

- (c) Diapause
 (d) Migration

- Q18.** Which of the following is a type of 'in-situ' conservation approach?

- (a) Zoological Parks
 (b) Botanical Gardens
 (c) Sacred Groves
 (d) Wildlife Safari Parks

- Q19.** Among vertebrates, the maximum number of species belong to _____.

- (a) Amphibians
 (b) Reptiles
 (c) Fishes
 (d) Birds

- Q20.** Identify the correct statement about decomposition -

- (A) The rate of decomposition is quicker, if detritus is rich in nitrogen and sugar.
 (B) Decomposition is largely an oxygen requiring process.
 (C) The rate of decomposition is slow, if detritus is rich in chitin and lignin.
 (D) The rate of decomposition is slow, if detritus is rich in nitrogen and sugar.

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

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

- Q21.** Arrange the following steps involved in Recombinant DNA Technology in correct sequence.

- (A) Insertion of recombinant DNA into host cell/ organism
 (B) Cutting of source DNA as well as vector DNA at specific location and their joining
 (C) Isolation of the genetic material (DNA)
 (D) Obtaining the foreign gene product
 (E) Culturing transformed host cells at large scale

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

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

- Q22.** Which of the following animal shows oestrus cycle?

- (a) Monkey
 (b) Ape
 (c) Human
 (d) Dog

- Q23.** *Taq* polymerase is isolated from:

- (a) *Bacillus thuringiensis*
 (b) *Thermus aquaticus*
 (c) *Staphylococcus*
 (d) *Azotobacter*

Q24. Match List-I with List-II:

List-I		List-II	
(A)	Physical barriers	(I)	Acid in stomach, saliva in mouth and tears in eyes
(B)	Cytokine barriers	(II)	PMNL-neutrophils and monocytes
(C)	Cellular barriers	(III)	Skin on body, mucus coating of epithelium which lines respiratory tract
(D)	Physiological barriers	(IV)	Interferons

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

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

Q25. Which of the following is a free-living soil nitrogen fixing bacteria?

- (a) *Rhizobium*
 (b) *Glomus*
 (c) *Azospirillum*
 (d) *Oscillatoria*

Q26. Match List-I with List-II:

List-I		List-II	
(A)	Wheat	(I)	<i>Pusa komal</i>
(B)	<i>Brassica</i>	(II)	<i>Himgiri</i>
(C)	Cowpea	(III)	<i>Pusa sadabahar</i>
(D)	Chilli	(IV)	<i>Pusa swarnim</i>

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

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

Q27. Continued inbreeding and especially close inbreeding reduces fertility and productivity in animals.

This happens due to

- (a) Homozygosity
 (b) Inbreeding depression
 (c) Interspecific depression
 (d) Outbreeding depression

Q28. Which part of human eye absorbs UV-B radiation?

- (a) Iris
 (b) Cornea
 (c) Retina
 (d) Choroid

Q29. Steps of replication of retrovirus (HIV) in the host cell are given below. Arrange the steps in correct sequence.

- (A) Viral RNA is introduced in host cell

- (B) New viruses with new RNA are produced
 (C) Viral DNA is produced by reverse transcription
 (D) Viral DNA incorporates into host genome
 (E) Virus infects the normal cell

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

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

Q30. Match List-I with List-II:

List-I (Name of microorganism)		List-II (Chemical)	
(A)	<i>Aspergillus niger</i>	(I)	Citric acid
(B)	<i>Acetobacter aceti</i>	(II)	Acetic acid
(C)	<i>Clostridium butylicum</i>	(III)	Butyric acid
(D)	<i>Lactobacillus</i>	(IV)	Lactic acid

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

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

Q31. Arrange the following steps involved in Frederick Griffith experiment in correct order.

- (A) When R-strain was injected into mice, the mice remained alive.
 (B) When heat killed S-strain was injected into mice, the mice remained alive.
 (C) The *Streptococcus pneumoniae* bacteria grown on a culture plate to produce the S and R strain colonies.
 (D) When S-strain was injected into mice, the mice died.
 (E) When heat killed S-strain + live R-strain was injected into mice, the mice died.

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

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

Q32. RNAi takes place in all eukaryotic organisms as a method of _____.

- (a) transcription of functional RNA
 (b) protein synthesis
 (c) cellular defense
 (d) translation of functional protein

Q33. Which of the following is NOT a sexually transmitted disease?

- (a) Trichomoniasis
 (b) Syphilis
 (c) Cirrhosis
 (d) Chlamydia

Q34. Match List-I with List-II:

List-I		List-II	
(A)	Streptokinase	(I)	immuno suppressive agent
(B)	Cyclosporin A	(II)	clot buster
(C)	Statin	(III)	helpful in removing oil stains
(D)	Lipase	(IV)	blood cholesterol lowering agents

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

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

Q35. Select the correct statements with respect to *Agrobacterium tumefaciens*.

- (A) It is a pathogen of many monocot plants.
 (B) It can deliver T-DNA and transform normal plant cells into tumor
 (C) Tumor inducing plasmid of *Agrobacterium tumefaciens* is modified into a pathogenic cloning vector.
 (D) Tumor inducing plasmid of *Agrobacterium tumefaciens* is used to deliver genes of interest into plants

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

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

Q36. According to the Central Pollution Control Board (CPCB), the particulate size responsible for causing the greatest harm to human health is:

- (a) PM 2.5
 (b) PM 5.2
 (c) PM 4.0
 (d) PM 4.5

Q37. Which of the following came to India as a contaminant with imported wheat _____.

- (a) *Oxalis*
 (b) *Parthenium*
 (c) *Hibiscus*
 (d) *Zostera*

Q38. Which vector is used for introducing nematode specific genes into the tobacco host plant.

- (a) Bacteriophage
 (b) *Agrobacterium*
 (c) Plasmid
 (d) *Bacillus thuringiensis*

Q39. Which of the following show Pleiotropism?

- (a) Thalassaemia
 (b) Phenylketonuria

- (c) Haemophilia
 (d) Anaemia

Q40. Match List-I with List-II:

List-I		List-II	
(A)	Operator	(I)	RNA polymerase
(B)	Promotor	(II)	Permeability of the cell
(C)	γ -gene	(III)	Hydrolysis of a specific disaccharide
(D)	z-gene	(IV)	Repressor protein

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

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

Direction for the question 41 to 45: Read the paragraph given below and answer the question.

Sutton and Boveri argued that the pairing and separation of a pair of chromosomes would lead to the segregation of a pair of factors they carried. Sutton united the knowledge of chromosomal segregation with Mendelian principles and called it the **chromosomal theory of inheritance**.

Following this synthesis of ideas, experimental verification of the chromosomal theory of inheritance by Thomas Hunt Morgan and his colleagues, led to discovering the basis for the variation that sexual reproduction produced. Morgan worked with the tiny fruit flies, which were found very suitable for such studies. They could be grown on simple synthetic medium in the laboratory. They complete their life cycle in a short span of time and a single mating could produce a large number of progeny flies. Also, there was a clear differentiation of the sexes - the male and female flies are easily distinguishable. Also, it has many types of hereditary variations that can be seen with low power microscopes.

Q41. The scientist who noted that "The behaviour of chromosomes was parallel to the behaviour of gene" were:

- (a) Sutton and Boveri
 (b) de Vries, Correns and Tschermak
 (c) Punnett and Bateson
 (d) Morgan and Bridges

Q42. Which of the following scientist worked with *Drosophila*?

- (a) Walter Sutton and Theodore Boveri
 (b) Frederick Griffith
 (c) Thomas Hunt Morgan
 (d) Correns

Q43. *Drosophila melanogaster* complete their life cycle in

- (a) about 1 week
 (b) about 2 weeks
 (c) about 3 to 4 weeks
 (d) about 7 weeks

Q44. Which statement is incorrect with respect to *Drosophila*.

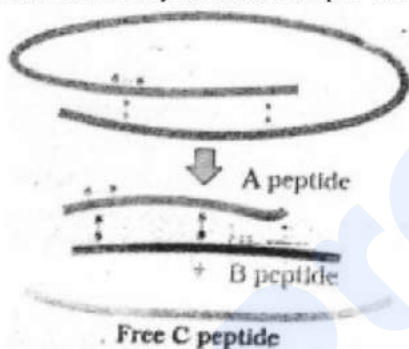
- (a) Could be easily grown in laboratory
- (b) Easily distinguishable male and female
- (c) Large number of contrasting traits
- (d) Less number of variations in their population helps in better studying of traits

Q45. Cross performed between yellow bodied, white eyed females and brown bodied red eyed males of *Drosophila* results in:

- (a) 9 : 3 : 3 : 1 F_2 ratio
- (b) 1 : 2 : 1 F_1 ratio
- (c) F_2 ratio deviating from 9 : 3 : 3 : 1
- (d) F_1 ratio deviating from 1 : 2 : 1

Direction for the question 46 to 50: **Read the paragraph given below and answer the question.**

Insulin used for diabetes was earlier extracted from slaughtered cattle and pigs. Insulin from an animal source, though caused some patients to develop allergy or other type of reactions. Insulin consists of two short polypeptide chains: chain A and chain B, that are linked bridges. In mammals, including human, insulin is synthesised as a pro-hormone.



Q46. Proinsulin is made up:

- (A) Peptide A
- (B) Free peptide
- (C) Peptide B
- (D) Peptide C

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

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

Q47. Insulin is synthesised as _____ in mammals.

- (a) Pro-hormone
- (b) Pro-enzyme
- (c) Peptide C
- (d) Disulfide bond

Q48. Bonds which link 'A' and 'B' peptide chains of human insulin are _____.

- (a) Peptide
- (b) Disulfide
- (c) Covalent
- (d) Hydrogen

Q49. Identify the correct statements.

- (A) Insulin was earlier extracted from the liver of slaughtered animals.
- (B) Eli Lilly, an American company is producing insulin using r-DNA technique.
- (C) Some diabetics developed allergy with the animal sourced insulin.
- (D) Pro-insulin can control diabetes.

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

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

Q50. Patient with diabetes have:

- (a) Normal blood glucose level
- (b) Normal glucose and electrolyte level in blood
- (c) Blood glucose level less than normal level
- (d) Blood glucose more than normal level