

CUET UG 2023 Biology Question Paper PDF (Jun 10, 2023) (Shift 3)

- Q1.** What amount of energy would be at the producer level if it is 50 KJ at third trophic level?
 (a) 5 KJ
 (b) 50 KJ
 (c) 500 KJ
 (d) 5000 KJ

- Q2.** Match **List-I** with **List-II**:

List-I		List-II	
(A)	Eyes	(I)	Ginger
(B)	Rhizome	(II)	Potato
(C)	Offset	(III)	Agave
(D)	Bulbil	(IV)	Water hyacinth

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

- (a) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
 (b) (A)-(II), (B)-(I), (C)-(III), (D)-(IV)
 (c) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
 (d) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)
- Q3.** Copying genetic information from one strand of DNA into mRNA is:
 (a) Transcription
 (b) Translation
 (c) Transformation
 (d) Replication
- Q4.** Transfer of pollen grains from anther of one flower to the stigma of a flower of different plant is called as:
 (a) Fertilisation
 (b) Geitonogamy
 (c) Xenogamy
 (d) Cleistogamy

- Q5.** Match **List-I** with **List-II**:

List-I		List-II	
(A)	Homozygosity	(I)	Cross breeding
(B)	Out breeding	(II)	Over comes inbreeding depression
(C)	Hisardale	(III)	Cross between different breeds
(D)	Outcross	(IV)	Pure lines

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

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

- Q6.** How many episodes of mass extinctions of species have occurred on earth since the origin and diversification of life?
 (a) Two
 (b) Three
 (c) Five
 (d) SIX

- Q7.** Arrange the steps of Polymerase chain reaction in proper sequence-
 A. Selection of desired fragment of DNA
 B. Annealing
 C. Amplification
 D. Extension
 E. Denaturation

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

- (a) A, E, B, D, C
 (b) A, B, C, E, D
 (c) A, D, B, C, E
 (d) E, A, B, C, D
- Q8.** The process of evolution of different species in a given geographical area starting from a point and dispersing to other areas is called as:
 (a) Natural Selection
 (b) Adaptive radiations
 (c) Disruptive selection
 (d) Convergent evolution
- Q9.** Identify the mammals which live wholly in water:
 A. Dolphins
 B. Seals
 C. Sea Horse
 D Sea cow

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

- (a) A, B and C only
 (b) B, C and D only
 (c) A, C and D only
 (d) A, B and D only
- Q10.** Human protein α -1 antitrypsin is used to treat _____.
 (a) Phenylketonuria
 (b) Emphysema
 (c) Haemophilia A
 (d) Hepatitis B

- Q11.** In a laboratory population of 80 fruit flies, 8 died in a week, then the death rate of fruit flies is:
 (a) 0.3 individuals per fruit fly per week
 (b) 0.2 individuals per fruit fly per week
 (c) 0.1 individuals per fruit fly per week
 (d) 0.01 individuals per fruit fly per week

Q12. The A and B polypeptides chains in insulin are linked together by which bond?

- (a) Diester
- (b) Disulphide
- (c) Hydrogen
- (d) Peptide

Q13. The karyotype in Klinefelter's syndrome is:

- (a) $2.44 + XO$
- (b) $44 + XXX$
- (c) $44 + XXY$
- (d) $44 + YO$

Q14. In some species of Asteraceae and grasses, seeds are produced without fertilisation. This phenomenon is known as:

- (a) Apomixis
- (b) Parthenogenesis
- (c) Embryogenesis
- (d) Gametogenesis

Q15. Fine powder of recycled modified plastics is:

- (a) Polythene
- (b) Polybag
- (c) Polyblend
- (d) Polystyrene

Q16. Arrange the following steps for replication of HIV in a correct sequence:

- A. Production of new viral RNA by infected cell
- B. Infection of normal cell by virus
- C. Production of viral DNA
- D. Production of new viruses

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

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

Q17. Identify the free-living nitrogen fixing bacteria

- A. *Rhizobium*
- B. *Mycorrhiza*
- C. *Azospirillum*
- D. *Azotobacter*

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

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

Q18. The backbone of a polynucleotide chain is formed by:

- (a) Sugar and nitrogenous base
- (b) Nitrogenous base and phosphates
- (c) Sugar and phosphates
- (d) Sugar, nitrogenous base and phosphates

Q19. Chromosomes in meiocytes of butterfly are:

- (a) 00
- (b) 208

(c) 308

(d) 380

Q20. The enzyme which is used to remove nucleotides from the ends of DNA fragment is-

- (a) DNA ligase
- (b) Restriction endonuclease
- (c) Restriction exonuclease
- (d) DNA Polymerase

Q21. Spermiogenesis is the process of formation of:

- (a) Sperms from spermatids
- (b) Spermatids from secondary spermatocytes
- (c) Secondary from primary spermatocytes
- (d) Primary spermatocytes from spermatogonia

Q22. Match List-I with List-II:

List-I (Disease)		List-II (Causative agent)	
(A)	Typhoid	(I)	Rhino viruses
(B)	Pneumonia	(II)	<i>Salmonella typhi</i>
(C)	Common cold	(III)	<i>Haemophilus influenzae</i>
(D)	Elephantiasis	(IV)	<i>Wuchereria malayi</i>

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

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

Q23. Colostrum secreted by mother is rich in:

- (a) Ig D antibodies
- (b) Ig E antibodies
- (c) Ig A antibodies
- (d) Ig M antibodies

Q24. Identify the common Sexually Transmitted Infections (STIs):

- (a) Chlamydiasis, Trichomoniasis, Influenza
- (b) Elephantiasis, Chlamydiasis, Syphilis
- (c) Trichomoniasis, Elephantiasis, Ascariasis
- (d) Chlamydiasis, Trichomoniasis, Syphilis

Q25. What kind of IUD is Lippes loop?

- A. Non-medicated
- B. Copper releasing
- C. Zinc releasing
- D. Hormone releasing
- E. Medicated IUDs

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

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

Q26. Signals of parturition originate from which of the following?

- A. Human Placental Lactogen
- B. Parturition hormone
- C. Fully developed foetus
- D. Placenta

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

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

Q27. Match **List-I** with **List-II**:

List-I		List-II	
(A)	Phenylketonuria	(I)	Incomplete dominance
(B)	Haemophilia	(II)	9:3:3:1
(C)	Snapdragon	(III)	Pleiotropy
(D)	Dihybrid cross	(IV)	Sex-linked

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

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

Q28. Which of the following is NOT a technique of genetic engineering?

- (a) Creation of recombinant DNA
- (b) Use of gene cloning
- (c) Gene transfer
- (d) Grafting

Q29. The yellow mosaic virus resistant variety Parbhani Kranti is the new variety of _____

- (a) Okra
- (b) Flat bean
- (c) Chilli
- (d) Cowpea

Q30. In which ecosystem, a large fraction of energy flows more through DFC than through GFC?

- (a) Pond Ecosystem
- (b) River Ecosystem
- (c) Estuary Ecosystem
- (d) Forest Ecosystem

Q31. Diseases caused by fungi are:

- A. Tobacco mosaic
- B. Brown rust of wheat
- C. Black rot of crucifers
- D. Red rot of sugarcane
- E. Late blight of potato

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

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

(c) A, C and D only

(d) B, C and D only

Q32. Match **List-I** with **List-II**:

List-I		List-II	
(A)	Molecular diagnosis	(I)	GEAC
(B)	Human therapeutics	(II)	Alpha - 1 - Antitrypsin
(C)	Transgenic 'Roise'	(III)	ELISA
(D)	Validity of GM research	(IV)	Human alpha lactalbumin

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

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

Q33. Match **List-I** with **List-II**:

List-I		List-II	
(A)	Alec Jeffreys	(I)	Operon model
(B)	Jacob and Monod	(II)	X-ray diffraction data DNA
(C)	Erwin Chargaff	(III)	DNA Fingerprinting
(D)	Wilkins and Franklin	(IV)	$\frac{A+G}{T+C} = 1$

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

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

Q34. Bone structure of forelimbs of vertebrates like whale, bat, cheetah and human is evidence of:

- (a) Convergent evolution
- (b) Divergent evolution
- (c) Disruptive selection
- (d) Directional selection

Q35. What of the following team refers to the confinement of the species to a specific area and also the same species are not found anywhere

- (a) Pandemism
- (b) Endemism
- (c) Epidemic
- (d) Botanical Garden

Q36. "Jhum cultivation" in the north-eastern states of India has contributed to:

- (a) Reforestation
- (b) Plantation
- (c) Deforestation
- (d) Habitat Construction

Q37. Match List-I with List-II:

List-I		List-II	
(A)	Anaerobic sludge digester	(I)	Secondary treatment
(B)	Primary sludge	(II)	Activated sludge
(C)	Change in BOD	(III)	Primary treatment
(D)	Bacterial flocs	(IV)	Biogas

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

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

Q38. Which of statements are correct about Thalassemia?

- A. In β Thalassemia, production of α globulin chain is affected and in α Thalassemia production of β globulin chain is affected.
- B. α Thalassemia is controlled by two closely linked genes HBA1 and HBA2
- C. The genes HBA1 and HBA2 are located on chromosome 11 of each parent.
- D. β Thalassemia is controlled by a single gene HBB
- E. The gene HBB is located on chromosome 16 of each parent.

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

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

Q39. The organism responsible for large holes in 'Swiss cheese' is:

- (a) *Saccharomyces cerevisiae*
- (b) *Lactobacillus lactobacter*
- (c) *Trichoderma polysporum*
- (d) *Propionibacterium sharmanii*

Q40. The interaction between two species where one species is benefitted and the other is neither benefitted nor harmed is known as:

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

Direction for the question 41 to 45: **Read the passage carefully. Attempt the questions.**

In our body, cell growth and differentiation is highly controlled and regulated. In cancer cells, there is breakdown of these regulatory mechanisms. Cancerous cells just continue to divide giving rise to masses of cells called tumors. Benign tumors normally remain confined to their original

location. The malignant tumors, on the other hand are a mass of proliferating cells. These cells actively divide and starve the normal cells by competing for vital nutrients. Cells sloughed from such tumors reach distant sites through blood and wherever they get lodged in the body, they start a new tumor there. This property is called metastasis. Transformation of normal cells into cancerous cells may be induced by physical, chemical or biological agents called carcinogens.

Q41. The statement which is correct for cancer cells:

- (a) These cells grow very slowly invade and damage the blood cells
- (b) These cells grow very rapidly, invade and damage the normal tissue
- (c) These cells grow very slow, invade and manufacture the plasma cells
- (d) These cells grow very rapidly invade and damage the liver cells only

Q42. Cancer is caused by:

- A. Carcinogens
- B. Protein rich foods
- C. Primary lymphocytes
- D. Oncogenes

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

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

Q43. Normal cells show a property that does not allow their uncontrolled growth. This property is known as:

- (a) Contact inhibition
- (b) Contact selection
- (c) Metastasis
- (d) Contact promotion

Q44. Benign tumors are normally remain confined to:

- (a) Blood and later spread to other parts of body.
- (b) Original location and do not spread to other parts of the body.
- (c) Original location and later spread to all the body parts.
- (d) Original location and cause heavy damage to the body parts.

Q45. Tobacco smoke been identified as a major cause of:

- (a) Skin Cancer
- (b) Blood Cancer
- (c) Lung Cancer
- (d) Brain Cancer

Direction for the question 46 to 50: **Read the passage carefully. Attempt the questions.**

An overwhelming majority (99 per cent) of animals and nearly all plants cannot maintain a constant internal environment. Their body temperature changes with the ambient temperature. In aquatic animals, the osmotic concentration of the body fluids change with that of the ambient air and water osmotic concentration. These animals and plants are simply conformers. Considering the benefits of a constant internal environment to the organism, we must ask why these conformers had not evolved to become regulators. Recall the human analogy we used above; much as they like, how many people can really afford an air conditioner? Many simply 'sweat it out' and resign themselves to suboptimal performance in hot summer months. Very small animals are rarely found in polar regions. During the course of evolution, the costs and benefits of maintain in a constant internal environment are taken into consideration. Some species have evolved the ability to regulate, but only over a limited range of environmental conditions, beyond which they simply conform. If the stressful external conditions are localised or remain only for a short duration, the organism has five other alternatives for survival.

Q46. Conformers have not evolved to become regulators because:

- (a) Conformers are generally small sized organisms.
- (b) Cost of becoming a regulator is very low.
- (c) Their anatomical structure is simple,
- (d) Cost of becoming a regulation is very high.

Q47. Identify the animal which is NOT a conformer.

- (a) Humming bird
- (b) Shrew

- (c) Polar Bear
- (d) Lizard

Q48. Conformers are the animals whose body temperature:

- (a) Remain constant
- (b) Change with the surrounding temperature.
- (c) Remain quite lower than the surrounding temperature
- (d) Remain quite higher than the surrounding temperature

Q49. Identify the set of aquatic animals whose osmotic concentration is not constant.

- (a) Whale and Fish
- (b) *Amoeba* and *Paramecium*
- (c) Whale and Dolphin
- (d) Dolphin and Fish

Q50. Identify the statements which support the reason why small animals are rarely found in polar regions.

- A. Small animals have larger surface area relative to their volume
- B. Small animals have larger volume relative to their surface area
- C. Shrews and humming birds are not found in polar region
- D. Small animals have smaller surface area relative to their volume

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

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