

# CET MODEL TEST PAPER -4

## SUBJECT: BIOLOGY

TOTAL NO. OF QUESTIONS=60

TIME=70 MINUTES

1. Match the following: Column I contains different taxonomic categories and Column II contains taxonomic units of Coconut.

COLUMN I	COLUMN II
A. Kingdom	p. <i>Cocos</i>
B. Division	q. <i>nucifera</i>
C. Order	r. Plantae
D. Class	s. Embryophyta siphonogama
E. Family	t. Palmae
F. Genus	u. Monocotyledonae
G. Species	v. Principes

1. A=r, B=s, C=v, D=u, E=t, F=p, G=q
2. A=r, B=v, C=s, D=t, E=u, F=p, G=q
3. A=r, B= t, C=v, D=u, E= s, F=p, G=q
4. A=r, B=u, C=v, D=s, E=t, F=p, G=q

2. Which one of the following events is not observed in mitosis?

1. Condensation of chromatin.
2. Movement of centrioles to opposite poles.
3. Appearance of chromosomes with two chromatids joined together at centromere.
4. Exchange of genetic material between the homologous chromosomes.

3. Kingdom Protista includes,

1. All prokaryotic unicellular organisms except bacteria.
2. All eukaryotic unicellular organisms.
3. All eukaryotic, multicellular autotrophic organisms.
4. All eukaryotic multicellular heterotrophic organisms.

4. Which one of the following statements about Viroids is true?

1. The Viroids are made up of ss RNA enclosed in a protein coat.
2. The Viroids are made up of ds RNA enclosed in a protein coat.
3. The Viroids are made up of ss RNA without a protein coat.
4. The Viroids are made up of ds RNA without a protein coat.

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**5. The fruiting bodies of .....are edible.**

1. *Mucar*
2. *Rhizopus*
3. *Penicillium notatum*
4. *Volvariella volvacea*

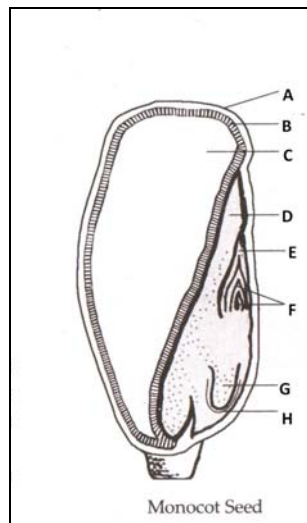
**6. A prothallus is,**

1. A free-living sporophyte formed by the germination of spores in pteridophytes.
2. A free-living gametophyte formed by the germination of spores in pteridophytes.
3. A free-living sporophyte formed by the germination of spores in bryophytes.
4. A free-living gametophyte formed by the germination of spores in bryophytes.

**7. In monoadelphous condition,**

1. The stamens are attached to the corolla tube.
2. The filaments of stamens are fused but the anther lobes are free.
3. The stamens are completely united throughout the filament and anther lobe.
4. The filaments of stamens are free while the anther lobes are fused.

**8. The diagram represents the L.S of Maize seed [monocot seed]. Identify the labeling A,B,C,D,E,F,G and H in the diagram.**



1. A=Seed coat, B=Aleurone Layer, C=Endosperm, D=Scutellum, E=Coleoptile, F=Plumule, G=Radicle, H=Coleorhiza.
2. A=Seed coat, B= Endosperm, C= Aleurone Layer, D= Coleoptile, E= Scutellum, F=Plumule, G=Radicle, H=Coleorhiza
3. . A=Seed coat, B=Aleurone Layer, C=Endosperm, D=Scutellum, E= Coleorhiza, F= Radicle, G= Plumule, H= Coleoptile
4. A=Seed coat, B= Scutellum, C= Radicle, D= Endosperm, E= Coleorhiza, F= Aleurone Layer, G= Plumule, H= Coleoptile

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**9. An example for chromoprotein is**

1. Haemoglobin
2. Insulin
3. Casein
4. Histone

**10. Gene frequency in a population remains stable in the presence of**

1. Gene flow
2. Genetic drift
3. Mutation
4. Random mating

**11. MATCH THE FOLLOWING:**

COLUMN I	COLUMN II
A. Limbless amphibian	p. Echidna
B. Flightless bird	q. Ostrich
C. Egg laying mammal	r. Chameleon
D. Arboreal reptile	s. Ichthyophis
	t. Palaemon

1. A=s, B=q, C=p, D=r
2. A=t, B=q, C=p, D=s
3. A=s, B=t, C=q, D=r
4. A=s, B=q, C=p, D=t

**12. Which one of the following statements is correct?**

1. In *Sycon*, a non cellular, jelly like substance called mesoglea is present in between ectoderm and mesoderm.
2. *Unio* contains choanocytes.
3. In star fish, canal system is present.
4. *Spongilla* is a fresh water sponge.

**13. Read the following statements A and B:**

**Statement A-** In some Cnidarians, metagenesis is observed.

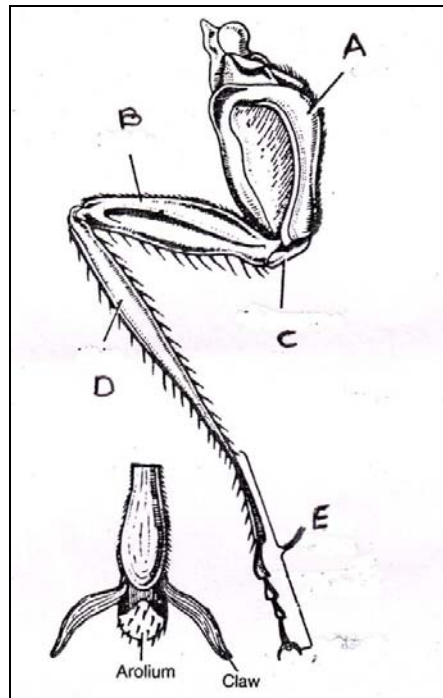
**Statement B-** In *Physalia*, the polyp produces medusa by asexual reproduction and Medusa in turn produces polyp by sexual reproduction.

1. Both the statements A and B are correct and B is the reason for A.
2. Both the statements A and B are correct and B is not the reason for A.
3. The statement A is correct but B is wrong.
4. The statement A is wrong but B is correct.

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14. The following diagram represents the leg of cockroach. Identify the parts labelled A, B, C, D, and E.



1. A=Coxa, B=Femur, C=Trochanter, D=Tibia,E=Tarsus
2. A= Femur, B= Coxa, C= Tarsus, D=Tibia,E= Trochanter
3. A= Tarsus, B= Trochanter, C= Femur, D=Tibia,E= Coxa
4. A= Tarsus, B= Trochanter, C= Femur, D= Coxa,E= Tibia

15. An example of indigenous draught breed of cattle is

1. Sindhi
2. Sahiwal
3. Amrithamahal
4. Murrah.

16. In a DNA strand, the nucleotides are linked together by

1. Glycosidic Bonds
2. Phosphodiester bonds
3. Peptide bonds
4. Hydrogen bonds

**17. During semiconservative method of DNA replication, the synthesis of DNA is discontinuous in one strand. This is because,**

1. DNA polymerase III can polymerize in 5'-3' direction only.
2. DNA molecule being synthesized is very long.
3. Discontinuous synthesis helps in removing mismatched nucleotides.
4. RNA primer is synthesized in only one strand.

**18. In *Lac* operon, the operator combines with**

1. Regulator protein to switch off structural gene transcription.
2. Regulator protein to switch on structural gene transcription.
3. Inducer protein to switch off structural gene transcription.
4. Regulator gene protein to switch off structural gene transcription.

**19. Which one of the following sequences is *not correct* in relation to the experiment conducted by Griffith on *Streptococcus pneumoniae* to prove DNA as the genetic material?**

1. Live S-strain-Injected to mice-Mice die
2. Live R-strain-Injected to mice-Mice live
3. S-strain [heat killed]-Injected to mice-Mice die.
4. S-strain [heat killed] +R strain alive-Injected to mice-Mice die.

**20. The "probe" used in DNA fingerprinting is a**

1. Radioactive labelled protein
2. Radioactive Labelled Restriction endonuclease
3. Radioactive labelled ss DNA
4. Radioactive labelled ds DNA

**21. Of the three genes used for the creation of golden rice, two genes obtained from Daffodil plants code for**

1. Phytoene synthase and Lycopene Cyclase
2. Phytene synthase and Carotene Desaturase
3. Carotene desaturase and B-carotene
4. B-carotene and Phytoene synthase

**22. Production of haploids through plant tissue culture has enormous importance in crop improvement. This is because,**

1. They can grow in extreme environmental conditions.
2. They are useful in cell cycle studies
3. They can be used as homozygous lines and can be diploidized.
4. They are useful in the production of embryos.

**23. The unique property of pluripotent stem cells is that**

1. They can develop into a whole individual.
2. They help in the production of monoclonal antibodies.
3. They can develop into any tissue in the body.
4. They can be used to treat infectious diseases.

**24. The term "restriction" in restriction endonuclease refers to**

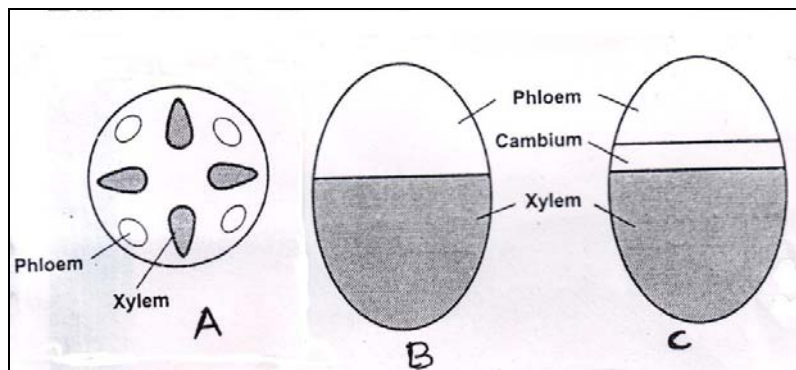
1. Breaking phosphodiester bond in DNA by enzyme.
2. Preventing multiplication of bacteriophage in bacteria.
3. Cutting DNA at specific positions only.
4. Cutting the DNA strands by breaking hydrogen bonds.

**25. Read the following statements:**

- I. Sieve cells and albuminous cells originate from single mother cell.
- II. Treacher elements have perforated end walls with wider lumen.
- III. Sieve tube elements are found in plants like Cycas and Pinus.
- IV. Callose is deposited around sieve pores on sieve plates.

Of these, the correct statements are,

1. I and III
2. II and IV
3. I, II, III
4. I, II, IV

**26. Observe the following diagrams of different types of vascular bundles and read the related statements.**

- I. Diagram A represents conjoint, collateral vascular bundle.
- II. Diagram B represents Conjoint, collateral, closed vascular bundle.
- III. Diagram C represents conjoint, collateral, open vascular bundle.
- IV. Diagram A represents the vascular bundle of Dicot root.
- V. Diagram B represents the vascular bundle of monocot root.

Of these, the correct statements related to the respective diagrams are

1. I, II, IV, V
2. I, II, III, IV, V
3. II, III, V
4. II, III, IV

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**27. One common feature observed both in sieve tube elements and erythrocytes is**

1. Absence of nucleus.
2. Presence of cell wall.
3. Presence of chlorophyll
4. Absence of cytoplasm

**28. Read the following statements:**

**Statement A:** Ascent of sap is a passive activity driven by transpiration pull.

**Statement B:** During day time, stomata open due to respiratory activity.

1. Both the statements A and B are correct.
2. Both the statements A and B are wrong.
3. Statement A is correct but B is wrong.
4. Statement A is wrong but B is correct.

**29. Radial movement of water means,**

1. Movement of water from mesophyll tissue into intercellular spaces.
2. Movement of water from intercellular spaces into the outside of the leaf.
3. Movement of water from xylem of root into the xylem of leaf.
4. Movement of water from root hair into xylem of the root.

**30. When you compare the rate of absorption of water and rate of transpiration in the same healthy and well growing plant at the same time, what should be the result?**

1. The rate of absorption should be equal to rate of transpiration.
2. The rate of absorption should be slightly higher than rate of transpiration.
3. The rate of absorption should be less than rate of transpiration.
4. The two rates would be unrelated.

**31. Which of the following plants would be exhibiting the lowest rate of transpiration in the same place and at the same conditions?**

1. A plant with hypostomatic leaves.
2. A plant with amphistomatic leaves.
3. A plant with epistomatic leaves.
4. A plant with astomatic leaves.

**32. The initial acceptor of CO<sub>2</sub> in C-4 plants is**

1. Phosphoenol pyruvate
2. RuBP
3. 3-Phosphoglyceric acid
4. Oxaloacetic acid

**33. The end product of oxidative phosphorylation is**

1. NADH
2. O<sub>2</sub>
3. ADP
4. ATP and H<sub>2</sub>O

**34. Pyruvate is synthesized in**

1. Intermembranal space in mitochondria
2. Matrix of mitochondria
3. Cytoplasm
4. F<sub>0</sub>-F<sub>1</sub> particles

**35. Read the following statements A and B:**

**Statement A:** In lactate fermentation, neither O<sub>2</sub> is absorbed nor CO<sub>2</sub> is synthesized.

**Statement B:** When milk is turned into curds, there is no foaming.

1. Both the statements A and B are correct and A is the reason for B
2. Both the statements A and B are correct and B is not the reason for B.
3. The statement A is correct but B is wrong.
4. The statement A is wrong but B is correct.

**36. Match the following:**

Column I	Column II
A. 2,4-D	p. Richmond - Lang effect
B. ABA	q. Bolting and flowering
C. Ethylene	r. Stomatal closure
D. Gibberelic Acid	s. Ripening of fruits
	t. Weedicide in rice fields

1. A=t, B=r, C=s, D=q
2. A=t, B=q, C=s, D=p
3. A=s, B=p, C=t, D=r
4. A=p, B=q, C=r, D=t

**37. In a growth curve of a plant, the maximum growth is observed during**

1. Lag phase
2. Senescent phase
3. Decline phase
4. Exponential phase



**38. Mother and father of a person with "O" blood group have "A" and "B" blood group respectively. What would be the genotype of both mother and father?**

1. Mother is homozygous "A" group and father heterozygous for "B".
2. Mother is heterozygous "A" group and father homozygous for "B".
3. Both mother and father are heterozygous for "A" and "B" group respectively.
4. Both mother and father are homozygous for "A" and "B" group respectively.

**39. In Mendel's Dihybrid cross experiment, the ratio obtained in F<sub>2</sub> generation is 9:3:3:1. Of these, how many types of phenotypes and genotypes are observed?**

1. Phenotypes-4 and Genotypes-16
2. Phenotypes-4 and Genotypes-8
3. Phenotypes-4 and Genotypes-9
4. Phenotypes-9 and Genotypes-4

**40. Which one of the following statements is wrong?**

1. Down's syndrome is caused due to the non-disjunction of chromosomes during meiosis.
2. Klinefelter's syndrome is an example for autosomal hyper-aneuloidy.
3. The individuals with Turner's syndrome will have 45 chromosomes in each of the diploid cells.
4. Cri du chat syndrome occurs due to the partial deletion of short arm of 5<sup>th</sup> chromosome.

**41. The blood group of a person is determined by mixing his blood with serum. Serum means:**

1. Plasma containing only platelets.
2. Plasma that is separated from clotted blood.
3. Plasma devoid of formed elements
4. Plasma containing only white blood cells.

**42. Identify the one that is not a method of *ex-situ* conservation.**

1. Cryopreservation
2. Seed Bank
3. Zoo
4. National park

**43. With reference to environmental pollution, consider the following statements A and B:**

**Statement A:** Acid rains are caused by H<sub>2</sub>SO<sub>4</sub> only.

**Statement B:** While SO<sub>2</sub> is highly injurious to plants, NO<sub>2</sub> is not injurious to plants.

1. Both the Statements A and B are correct.
2. Statement A is correct but B is wrong
3. Statement A is wrong but B is correct
4. Both the statements A and B are wrong.

**44. The name of Panduranga Hegde is associated with**

1. Appiko movement.
2. Save Tunga movement.
3. Project Tiger.
4. Narmada Bachao andolan.

**45. Kyoto protocol is aimed at**

1. Reducing worldwide emissions of radioactive material.
2. Reducing worldwide emissions of particulate matter.
3. Reducing worldwide emissions of green house gases.
4. Reducing worldwide emissions of CFCs.

**46. Which one of the following is a physiological, non-specific body defense mechanism?**

1. Skin.
2. Mucus membrane.
4. Hair.
4. Tears.

**47. A muscle fiber possesses striations and intercalated discs. This muscle fiber is**

1. Smooth muscle fiber.
2. Cardiac muscle fiber.
3. Skeletal muscle fiber.
4. Non-striated muscle fiber.

**48. Which one of the following statements is correct?**

1. Enterokinase is secreted by liver.
2. Bile pigments are important for emulsification of fats.
3. Trypsinogen gets converted into trypsin by HCl.
4. HCl is secreted by the parietal cells of gastric glands.

**49. Hepatitis B is a disease caused by**

1. Bacterial Infection.
2. Virus.
3. Prions.
4. Fungal infection.

**50. The fibers that connect bicuspid valve with the wall of heart is**

1. Corpus callosum.
2. *Crypts of Liberkuhn*.
3. Chordae Tendinae.
4. Cholecystokinin.

**51. Read the following statements A and B:****Statement A-** Coronary artery diseases can cause localized death of cardiac tissue**Statement B-** Myocardial ischemia or insufficient supply of O<sub>2</sub> leads to heart attacks.

1. Both statements are correct and B is the reason for A.
2. Both statements are correct and B is not the reason for A.
3. A is correct but B is wrong.
4. A is wrong but B is correct.

**52. All of the following are associated with inspiration in a mammal except:**

1. Increase in thoracic volume.
2. Flattening of dome shaped diaphragm.
3. Increase in intra-pulmonary pressure.
4. Contraction of external intercostal muscles.

**53. Bronchitis refers to,**

1. The inflammation of bronchi.
2. Fully blown out alveoli.
3. Inflammation of nasal tract.
4. Infection of nasal tract.

**54. Function of loop of Henle is**

1. Conservation of water.
2. Formation of urine.
3. Filtration of blood.
4. Passage of urine out of the body.

**55. The NET EFFECTIVE FILTRATION PRESSURE IS**

1. Glomerular Hydrostatic pressure+ {Capsular hydrostatic pressure + Blood colloidal pressure}
2. Glomerular Hydrostatic pressure- {Capsular hydrostatic pressure - Blood colloidal pressure}
3. Glomerular Hydrostatic pressure- {Capsular hydrostatic pressure + Blood colloidal pressure}
4. Glomerular Hydrostatic pressure+ {Capsular hydrostatic pressure - Blood colloidal pressure}

**56. Alcohol consumption increases volume of urine output because**

1. More water is consumed.
2. Of increased glomerular filtration rate.
3. Of decreased anti-diuretic hormone release.
4. Of decreased glomerular filtration rate.

**57. The disease chiefly associated with degeneration of dopamine secreting neurons of basal ganglia is**

1. Huntington's chorea.
2. Parkinson's disease.
3. Alzheimer's disease.
4. Epilepsy.

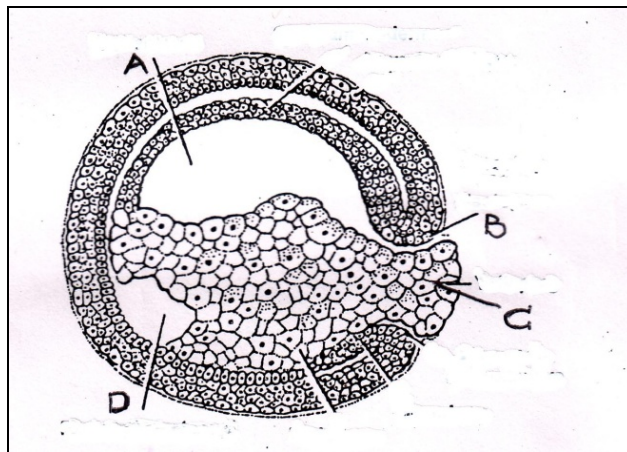
**58. In humans, Which one of the following possesses 22 autosomes and 1 sex chromosome?**

1. Primary Oocyte.
2. Zygote.
3. Oogonia.
4. Secondary oocyte.

**59. The hormone secreted by corpus luteum is**

1. Progesterone.
2. Aldosterone.
3. Prolactin.
4. Vasopressin.

**60. The diagram given here is the V.S of gastrula. Identify the labellings A, B, C and D.**



1. A= Yolk plug, B= Archenteron, C= Dorsal Lip, D=Blastocoel
2. A= Blastocoel, B=Dorsal Lip, C=Yolk plug, D= Archenteron
3. A=Archenteron, B=Dorsal Lip, C=Yolk plug, D=Blastocoel
4. A=Archenteron, B= Yolk plug, C= Dorsal Lip, D=Blastocoel

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