

CUET UG 2024  
**Previous Year Question**

1. Cells present in the mature pollen grains are \_\_\_\_\_.

1. Central cell and generative cell
2. Antipodal cell and vegetative cell
3. Vegetative cell and generative cell
4. Filiform cell and micropylar cell

4. Apomixis

4. In humans, mammary gland is divided into \_\_\_\_\_ lobes.

1. 10–12
2. 25–30
3. 30–35
4. 15–20

2. Match List-I with List-II.

**List-I**  
(Structures)

**List-II (Functions)**

(A) Filiform apparatus

(I) Made up of sporopollenin

(B) Tapetum

(II) Attachment of ovule to placenta

(C) Exine

(III) Guides pollen tube into the synergid

(D) Funicle

(IV) Nourishes the pollen grain

5. Sex in human embryo is determined by:

1. 'X' chromosome of egg
2. 'X' or 'Y' chromosome of sperm
3. Only 'Y' chromosome of sperm
4. Health of mother

6. Arrange stages of oogenesis in correct order.

- (A) Ovum
- (B) Oogonia
- (C) Primary oocyte
- (D) Secondary oocyte

Options given.

Choose the correct option.

3. Primary Endosperm Nucleus is the product of:

1. Double fusion
2. Triple fusion
3. Parthenogenesis

7. Which pair of contrasting traits was **not studied by Mendel**?

1. Pink and white flowers
2. Inflated and constricted pods
3. Axial and terminal flowers

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4. Green and yellow pods

\_\_\_\_\_

8. Failure of chromatids to segregate during cell division results in:

1. Polyploidy
  2. Euploidy
  3. Aneuploidy
  4. Autopolyploidy
- \_\_\_\_\_

9. Select correctly matched pair about **sickle cell anaemia**.

Genotype – Phenotype pairs given.

\_\_\_\_\_

10. Match scientists with discoveries.

Scientists	Discovery
Sutton & Boveri	Chromosomal theory
Sturtevant	Genetic maps
Henking	X-body
Griffith	Transformation

\_\_\_\_\_

11. Which statements are **incorrect with respect to nucleotides**?

- (A) Purines and pyrimidines are nitrogenous bases
- (B) Nucleotides are non-enzymatic molecules
- (C) Phosphate group linked to 5' C by phosphoester bond
- (D) RNA has additional –OH at 2' position
- (E) Thymine is a pyrimidine

Options given.

\_\_\_\_\_

12. Arrange steps of **DNA fingerprinting** in sequence:

- (A) Digestion with restriction enzyme
  - (B) Isolation of DNA
  - (C) Hybridisation with labelled VNTR probe
  - (D) Blotting onto membrane
- \_\_\_\_\_

13. Nucleosome is associated with \_\_\_\_\_ molecules of histones.

1. Four
  2. Nine
  3. Two
  4. Eight
- \_\_\_\_\_

14. Select correct observations from **Human Genome Project**.

Statements A–E given.

\_\_\_\_\_

15. Analogous structures result from:

1. Convergent evolution
  2. Divergent evolution
  3. Parallel evolution
  4. Retrogressive evolution
- \_\_\_\_\_

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16. Which does **not** affect **Hardy-Weinberg equilibrium**?

1. Natural selection
2. Genetic drift
3. Gene pool
4. Gene migration

17. Which primate was **more like an ape**?

1. Homo erectus
2. Dryopithecus
3. Australopithecus
4. Ramapithecus

18. Match placental mammals with marsupial counterparts.

Examples: Anteater, Bobcat, Lemur, Flying squirrel.

19. Identify incorrect statements about diseases:

- (A) Typhoid severe cases cause intestinal perforation
- (B) Common cold caused by Rhinovirus
- (C) Pneumonia causes bluish lips and nails
- (D) Pneumonia caused by Salmonella
- (E) Typhoid confirmed by Widal test

20. Match **types of immune barriers** with examples.

Cytokine, Physical, Cellular, Physiological barriers.

21. Smack is chemically:

1. Diacetyl morphine
2. Cocaine
3. Benzodiazepine
4. Amphetamine

22.

Antibodies are secreted by:

1. T-cells
2. B-cells
3. Alpha cells
4. Beta cells

23.

In sewage treatment, **flocs** are:

1. Solids settling during sedimentation
2. Supernatant above sludge
3. Mass of bacteria with fungal filaments
4. Anaerobic bacteria

24.

Match products with microorganisms.

Statin, Clot buster, Swiss cheese, Cyclosporin-A.

25.

Beetle used as **biocontrol agent for aphids**:

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1. Trichoderma
2. Dragonflies
3. Ladybird
4. Silverfish

- (C) rDNA technology does not involve isolation of DNA  
(D) DNA ligase joins DNA fragments

26. Downstream processing involves:

1. Identification
2. Amplification
3. Fermentation
4. Purification

30. Which statements are true?

- (A) Milk from Rosie is more balanced  
(B) Biopiracy refers to using bioresources without authorization  
(C) GEAC decides validity of GMOs  
(D) Transgenic animals help study disease genes

27. Incorrect pair of organism and cell-wall degrading enzyme:

1. Fungi – Chitinase
2. Algae – Methylase
3. Plant cells – Cellulase
4. Bacteria – Lysozyme

31. Match **transgene with its use/product**.

$\alpha$ -1 antitrypsin, cryIAc, Antisense RNA, cryIAb.

32. Expand **GEAC**.

1. Genetic and Environmental Advisory Committee
2. Gene Establishment Approval Committee
3. Genetic Engineering Advisory Committee
4. Genetic Engineering Approval Committee

28. Arrange steps in **bacterial transformation**:

- (A) Incubation with rDNA  
(B) Treatment with divalent cations  
(C) Heat shock  
(D) Selection on antibiotic agar  
(E) Placing again on ice

33. When insect feeds on Bt plant it dies due to activation of toxin in:

1. Alkaline pH of gut
2. Acidic pH of gut
3. Acidic saliva
4. Alkaline saliva

29. Identify incorrect statements about **recombinant DNA technology**.

- (A) DNA fragments separated by ELISA  
(B) Transformation introduces DNA into host bacterium

34. Match **interspecies relationships with features**.

Commensalism, Mutualism, Amensalism, Parasitism.

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35. Population having equal number of young and mature individuals indicates:

1. Expanding population
  2. Declining population
  3. Stable population
  4. S-shaped population
- 

36. Two species coexist by violating competitive exclusion principle through:

1. Eliminating inferior species
  2. Resource partitioning
  3. Symbiosis
  4. Changing grazing area
- 

37. Mineralisation releases:

1. Inorganic nutrients from detritus and humus formation
  2. Organic nutrients from humus
  3. Inorganic nutrients from humus
  4. Organic & inorganic nutrients from detritus
- 

38. In which ecosystem biomass of **primary consumers exceeds producers**?

1. Forest
  2. Grassland
  3. Desert
  4. Sea
- 

39. Which is **not a gaseous pollutant**?

1. SO<sub>2</sub>
  2. CO<sub>2</sub>
  3. NO<sub>2</sub>
  4. Fly ash
- 

40. In eutrophication of water bodies, main nutrient responsible is:

1. Nitrogen
  2. Phosphorus
  3. Calcium
  4. Sodium
- 

41. Which biome shows **highest biodiversity**?

1. Tundra
  2. Taiga
  3. Tropical rainforest
  4. Desert
- 

42. Ecological pyramid is **always upright for**:

1. Energy
  2. Biomass
  3. Numbers
  4. Consumers
-

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43. Which population growth curve is **logistic growth**?

1. J-shaped
  2. S-shaped
  3. Linear
  4. Exponential
- 

44. The ozone hole forms mainly due to:

1. CO<sub>2</sub>
  2. Methane
  3. CFCs
  4. SO<sub>2</sub>
- 

45. Greenhouse gases include:

1. CO<sub>2</sub>
  2. CH<sub>4</sub>
  3. N<sub>2</sub>O
  4. All of these
- 

46. Chipko movement is related to:

1. Wildlife protection
  2. Forest conservation
  3. River conservation
  4. Soil conservation
- 

47. Red Data Book contains information about:

1. Endangered species
  2. Extinct species
  3. Both endangered and extinct species
  4. Medicinal plants
- 

48. National park differs from sanctuary because:

1. Grazing allowed
  2. Human activities strictly prohibited
  3. Hunting allowed
  4. Timber extraction allowed
- 

49. Which of the following is **ex-situ conservation**?

1. National park
  2. Wildlife sanctuary
  3. Botanical garden
  4. Biosphere reserve
- 

50. Biodiversity conservation strategy includes:

1. In-situ conservation
  2. Ex-situ conservation
  3. Both
  4. None
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