

Zoology MCQ Practice

+2 2nd Year (Class XII)

49 questions · 6 chapters · answers with explanations

How to use: attempt each chapter's questions without looking, then check the Answer Key at the end. Read the one-line explanation for every question you got wrong, and revise that topic in your notes.

Human Reproduction

- Testosterone is secreted by
 - Sertoli cells
 - Leydig cells
 - spermatogonia
 - the epididymis
- One primary spermatocyte produces
 - one sperm
 - two sperm
 - four sperm
 - eight sperm
- One primary oocyte produces
 - four ova
 - one ovum and polar bodies
 - two ova
 - no ovum
- Ovulation is triggered by a surge of
 - FSH
 - LH
 - progesterone
 - oxytocin
- The corpus luteum secretes mainly
 - oestrogen
 - progesterone
 - LH
 - FSH
- Fertilisation in humans normally takes place in the
 - uterus
 - ampulla of the fallopian tube
 - ovary
 - cervix
- The hormone that causes uterine contractions during childbirth is
 - prolactin
 - oxytocin
 - relaxin
 - progesterone
- The first milk after childbirth, rich in antibodies, is called
 - colostrum
 - lactose
 - plasma
 - serum
- The sex of a child is determined by the
 - mother's egg
 - father's sperm
 - placenta
 - uterus

Reproductive Health

10. Which contraceptive also protects against STIs?
 (a) oral pill (b) condom
 (c) IUD (d) tubectomy
11. CuT is an example of
 (a) oral pill (b) copper-releasing IUD
 (c) barrier method (d) surgical method
12. "Saheli", the weekly oral pill, was developed by
 (a) AIIMS (b) CDRI, Lucknow
 (c) ICMR (d) NCERT
13. Vasectomy is a sterilisation method for
 (a) females (b) males
 (c) both (d) neither
14. Transfer of an embryo with more than 8 blastomeres into the uterus is called
 (a) ZIFT (b) IUT
 (c) GIFT (d) ICSI
15. Which STI is NOT completely curable?
 (a) gonorrhoea (b) syphilis
 (c) HIV infection (d) chlamydiasis
16. Amniocentesis is banned in India when used for
 (a) detecting genetic disorders (b) sex determination
 (c) checking foetal health (d) testing blood group

Evolution

17. Miller's experiment produced
 (a) proteins (b) amino acids
 (c) DNA (d) living cells
18. Forelimbs of whale, bat and human are examples of
 (a) analogous organs (b) homologous organs
 (c) vestigial organs (d) convergent evolution
19. Wings of a butterfly and a bird are
 (a) homologous (b) analogous
 (c) vestigial (d) identical
20. "Survival of the fittest" is part of
 (a) Lamarck's theory
 (b) Darwin's theory of natural selection
 (c) Mutation theory
 (d) Hardy-Weinberg principle
21. The mutation theory was proposed by
 (a) Darwin (b) Hugo de Vries
 (c) Lamarck (d) Mendel
22. Industrial melanism in the peppered moth is an example of
 (a) mutation (b) natural selection
 (c) genetic drift (d) use and disuse

23. In the Hardy–Weinberg equation, $2pq$ stands for the frequency of
(a) homozygous dominants (b) heterozygotes
(c) homozygous recessives (d) alleles
24. The first human-like hominid that made stone tools was
(a) Australopithecus (b) Homo habilis
(c) Homo erectus (d) Neanderthal man

Human Health and Disease

25. Typhoid is caused by
(a) Salmonella typhi (b) Plasmodium vivax
(c) Entamoeba histolytica (d) Wuchereria
26. Malaria is spread by the female
(a) Culex mosquito (b) Anopheles mosquito
(c) Aedes mosquito (d) housefly
27. Elephantiasis (filariasis) is caused by
(a) Ascaris (b) Wuchereria
(c) Plasmodium (d) a virus
28. Antibodies are produced by
(a) T-lymphocytes (b) B-lymphocytes
(c) RBCs (d) platelets
29. HIV mainly attacks
(a) RBCs (b) helper T-cells
(c) B-cells (d) platelets
30. The test used to diagnose AIDS is
(a) Widal test (b) ELISA
(c) ECG (d) biopsy
31. Passive immunity is given by
(a) vaccination (b) injecting ready-made antibodies
(c) infection (d) memory cells
32. The spread of cancer cells to distant parts of the body is called
(a) mitosis (b) metastasis
(c) metamorphosis (d) apoptosis
33. Smack (heroin) is obtained from
(a) cannabis (b) morphine (opium poppy)
(c) coca plant (d) tobacco

Biotechnology: Principles and Processes

34. Restriction enzymes are called
(a) molecular glue (b) molecular scissors
(c) vectors (d) primers
35. DNA ligase is used to
(a) cut DNA (b) join DNA fragments
(c) copy DNA (d) separate DNA

36. EcoRI recognises the sequence
 (a) GAATTC (b) GGATCC
 (c) AAGCTT (d) CTGCAG
37. In gel electrophoresis, DNA moves towards the
 (a) negative electrode (b) positive electrode (anode)
 (c) top of the gel (d) does not move
38. Taq polymerase is obtained from
 (a) *E. coli* (b) *Thermus aquaticus*
 (c) *Agrobacterium* (d) yeast
39. Ti plasmid is obtained from
 (a) *Agrobacterium tumefaciens* (b) *Bacillus thuringiensis*
 (c) *E. coli* (d) *Salmonella*
40. The first recombinant DNA was made by
 (a) Watson and Crick (b) Cohen and Boyer
 (c) Meselson and Stahl (d) Hershey and Chase
41. Recombinant colonies in blue–white screening appear
 (a) blue (b) white
 (c) red (d) green

Biotechnology and its Applications

42. Bt cotton has genes from
 (a) *Bacillus thuringiensis* (b) *Agrobacterium*
 (c) *E. coli* (d) *Rhizobium*
43. The Bt toxin becomes active in the insect gut because the gut is
 (a) acidic (b) alkaline
 (c) neutral (d) very cold
44. Golden rice is rich in
 (a) vitamin C (b) vitamin A (β -carotene)
 (c) iron (d) protein
45. The first gene therapy (1990) treated
 (a) diabetes (b) ADA deficiency
 (c) haemophilia (d) cancer
46. Human insulin made by Eli Lilly was produced in
 (a) yeast (b) *E. coli*
 (c) cow (d) sheep
47. Rosie was a transgenic
 (a) sheep (b) cow
 (c) goat (d) mouse
48. The body that approves GM research and release in India is
 (a) ICMR (b) GEAC
 (c) WHO (d) CSIR

- 49.** Using a nation's bio-resources without permission or fair payment is called
- | | |
|----------------------|----------------------|
| (a) biopatent | (b) biopiracy |
| (c) bioethics | (d) biosafety |

Answer Key with Explanations

Human Reproduction

1. (b) Leydig cells — Leydig (interstitial) cells lie between the seminiferous tubules.
2. (c) four sperm — By two meiotic divisions.
3. (b) one ovum and polar bodies — Unequal division gives one large ovum.
4. (b) LH — It happens around day 14 of the cycle.
5. (b) progesterone — It keeps the endometrium ready.
6. (b) ampulla of the fallopian tube — The zygote then moves to the uterus.
7. (b) oxytocin — It also helps milk ejection.
8. (a) colostrum — It contains IgA antibodies.
9. (b) father's sperm — X sperm → girl; Y sperm → boy.

Reproductive Health

10. (b) condom — It is a physical barrier.
11. (b) copper-releasing IUD — Copper ions reduce sperm motility.
12. (b) CDRI, Lucknow — It is non-steroidal.
13. (b) males — The vas deferens is cut and tied.
14. (b) IUT — ZIFT is for up to 8 blastomeres, into the fallopian tube.
15. (c) HIV infection — Hepatitis B and genital herpes are also not completely curable.
16. (b) sex determination — To prevent female foeticide.

Evolution

17. (b) amino acids — From CH_4 , NH_3 , H_2 and water vapour with electric sparks.
18. (b) homologous organs — Same structure, different function — divergent evolution.
19. (b) analogous — Same function, different structure.
20. (b) Darwin's theory of natural selection — The fittest leave more offspring.
21. (b) Hugo de Vries — Based on work on the evening primrose.
22. (b) natural selection — Dark moths were hidden on sooty trees.
23. (b) heterozygotes — $p^2 + 2pq + q^2 = 1$.
24. (b) Homo habilis — Brain size about 650–800 cc.

Human Health and Disease

25. (a) Salmonella typhi — The Widal test confirms it.
26. (b) Anopheles mosquito — Plasmodium is the parasite.
27. (b) Wuchereria — Spread by the Culex mosquito.
28. (b) B-lymphocytes — Humoral immunity.
29. (b) helper T-cells — Immunity then falls.
30. (b) ELISA — Enzyme-linked immunosorbent assay.
31. (b) injecting ready-made antibodies — Example: anti-tetanus serum, snake antivenom.
32. (b) metastasis — Only malignant tumours spread.
33. (b) morphine (opium poppy) — It is a depressant.

Biotechnology: Principles and Processes

34. (b) molecular scissors — They cut DNA at specific sequences.
35. (b) join DNA fragments — "Molecular glue".
36. (a) GAATTC — It gives sticky ends.
37. (b) positive electrode (anode) — DNA is negatively charged.
38. (b) Thermus aquaticus — It is heat-stable, used in PCR.
39. (a) Agrobacterium tumefaciens — Used to carry genes into plants.
40. (b) Cohen and Boyer — In 1972.
41. (b) white — Insertion inactivates the lacZ gene.

Biotechnology and its Applications

42. (a) Bacillus thuringiensis — cry genes make an insect-killing protein.

- 43. (b) alkaline — The protoxin is activated at high pH.
- 44. (b) vitamin A (β -carotene) — It helps fight vitamin A deficiency.
- 45. (b) ADA deficiency — A 4-year-old girl received a functional ADA gene.
- 46. (b) E. coli — A and B chains were made separately and joined.
- 47. (b) cow — Her milk had human alpha-lactalbumin.
- 48. (b) GEAC — Genetic Engineering Appraisal Committee.
- 49. (b) biopiracy — Example: attempts to patent Basmati rice.