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COMMON QUARTERLY EXAMINATION - 2023

Model question paper – 1

SUBJECT: ZOOLOGY

TIME: 3:00 hrs

CLASS: XII

MAX-MARKS: 70

Instructions:

- Check the question paper for fairness of printing.
- If there is any lack of fairness, inform the Hall Supervisor immediately.
- Use blue or black ink to write and underline and pencil to draw diagrams.

SECTION – A

Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer. 15 x 1 = 15

1. Assertion: In bee society, all the members are diploid except drones.
Reason: Drones are produced by parthenogenesis
a) Both A and R are true and R is correct explanation for A
b) Both A and R are true but R is not the correct explanation for A
c) A is true but R is false
d) If both A and R are false.
2. The foetal membrane that forms the basis of the umbilical cord is
a) Allantois b) Amnion c) Chorion d) Yolk sac
3. The approach which does not give the defined action of contraceptive is

(a)	Hormonal contraceptive	Prevents entry of sperms, prevent ovulation and fertilization
(b)	Vasectomy	Prevents spermatogenesis
(c)	Barrier method	Prevents fertilization
(d)	Intra uterine device	Increases phagocytosis of sperms, suppresses sperm motility and fertilizing capacity of sperms
4. If the child's blood group is 'O' and fathers blood group is 'A' and mother's blood group is 'B' the genotype of the parents will be
a) $I^A I^A$ and $I^B I^O$ b) $I^A I^O$ and $I^B I^O$ c) $I^A I^O$ and $I^O I^O$ d) $I^O I^O$ and $I^B I^B$
5. Which of the following statements about DNA replication is not correct?
a) Unwinding of DNA molecule occurs as hydrogen bonds break.
b) Replication occurs as each base is paired with another exactly like it.
c) Process is known as semi conservative replication because one old strand is conserved in the new molecule.
d) Complementary base pairs are held together with hydrogen bonds.
6. What is the basis for the difference in the synthesis of the leading and lagging strand of DNA molecules?
a) Origin of replication occurs only at the 5' end of the molecules.
b) DNA ligase works only in the 3' → 5' direction.
c) DNA polymerase can join new nucleotides only to the 3' end of the growing stand.
d) Helicases and single-strand binding proteins that work at the 5' end.
7. The golden age of reptiles was
a) Mesozoic era b) Cenozoic era c) Paleozoic era d) Proterozoic era
8. The Neanderthal man had the brain capacity of
a) 650 – 800cc b) 1200cc c) 900cc d) 1400cc
9. Allergy involves
a) IgE b) IgG c) IgA d) IgM
10. Choose the correctly match pair.
a) Amphetamines - Stimulant b) LSD - Narcotic
c) Heroin - Psychotropic d) Benzodiazepine - Pain killer
11. The Athlete's foot disease in human is caused by-----
a) Bacteria b) Fungi c) Virus d) Protozoan

12. Cyclosporin – A is an immunosuppressive drug produced from -----
 a) *Aspergillus niger* b) *Manascus purpureus*
 c) *Penicillium notatum* d) *Trichoderma polysporum*
13. The male sex hormone testosterone is secreted from
 a) Sertoli cells b) Leydig cells c) Epididymis d) Prostate gland
14. Which of the following is correct regarding HIV, hepatitis B, gonorrhoea and trichomoniasis?
 a) Gonorrhoea is a STD whereas others are not.
 b) Trichomoniasis is a viral disease whereas others are bacterial.
 c) HIV is a pathogen whereas others are diseases.
 d) Hepatitis B is eradicated completely whereas others are not
15. Haemophilia is more common in males because it is a
 a) Recessive character carried by Y-chromosome
 b) Dominant character carried by Y-chromosome
 c) Dominant trait carried by X-chromosome
 d) Recessive trait carried by X-chromosome

SECTION - B

Answer any SIX of the following in about 30 words each: Q.No: 22 is compulsory. 6 X 2 = 12

16. Why is the offspring formed by asexual reproduction referred as a clone?
 17. What is inhibin? State its functions.
 18. Differentiate foeticide and infanticide.
 19. What is Lyonisation?
 20. Differentiate - Template strand and coding strand.
 21. Mention any three similarities found common in Neanderthal man and *Homo sapiens*
 22. Why do you think it is not possible to produce vaccine against 'common cold'?
 23. List out chemical alarm signals produced during inflammation.
 24. Give any two bioactive molecules produced by microbes and state their uses.

SECTION - C

Answer any six the following in about 50 words each. Q.NO: 32 are compulsory. 6 X 3 = 18

25. Give reasons: A male honey bee has 16 chromosomes where as its female has 32 chromosomes.
 26. Placenta is an endocrine tissue. Justify.
 27. What is amniocentesis? Why a statutory ban is imposed on this technique?
 28. How is sex determined in human beings?
 29. Why is the human genome project called a mega project?
 30. How does Mutation theory of De Vries differ from Lamarck and Darwin's view in the origin of new species?
 31. List the causative agent, mode of transmission and symptoms for Diphtheria and Typhoid.
 32. Write short notes on *Ideonella sakaiensis*.
 33. A person is infected by HIV. How will you diagnose for AIDS?

SECTION - D

Answer all the questions in brief. 5 X 5 = 25

34. a) Explain the various phases of the menstrual cycle. (OR)
 b) What is syngamy? Explain various types of syngamy.
 35. a) Explain the role of oxytocin and relaxin in parturition and lactation. (OR)
 b) Describe the major STDs and their symptoms.
 36. a) Explain the genetic basis of ABO blood grouping man. (OR)
 b) Discuss the genic balance mechanism of sex determination with reference to *Drosophila*.
 37. a) In *E.coli*, three enzymes β - galactosidase, permease and transacetylase are produced in the presence of lactose. Explain why the enzymes are not synthesized in the absence of lactose. (OR)
 b) How does Hardy-Weinbergs expression ($p^2+2pq+q^2=1$) explain that genetic equilibrium is maintained in a population? List any four factors that can disturb the genetic equilibrium.
 38. a) Explain the structure of immunoglobulin with suitable diagram. (OR)
 b) Explain the process of replication of retrovirus after it gains entry into the human body.