

## Zoology Question Bank

### UNIT – II

#### Genetics and Evolution

One (01) Marks question

1. AB Blood group human is an example of
- Incomplete dominance
  - Co dominance
  - Multiple alleles
  - None of the above

Ans. (b)

1. मानवों में AB रक्त समूह किसका उदाहरण है ?
- अपूर्ण प्रभाविता
  - सह-प्रभाविता
  - समूहन बहुअलील
  - इनमें से कोई नहीं

2. Uralic is present in RNA in place of
- Thymine
  - Cytosine
  - Guanine
  - Adenine

Ans. (a)

2. आर एन ए में यूरासील किसके स्थान पर पाया जाता है ?
- थाईमिन
  - साइटोसीन
  - ग्वानिन
  - एडीनिन

3. Heterochromatin is transcriptionally
- inactive
  - active
  - both
  - none of these

Ans. (a)

3. हेटेरोक्रोमेटिन ट्रांसक्रिपसनली क्या होता है ?
- निष्क्रिय
  - सक्रिय
  - दोनों
  - इनमें से कोई नहीं

4. Which of the following is the enzyme required for DNA replication
- DNA Polymerase
  - RNA Polymerase
  - DNA dependant DNA polymerase
  - none of these

Ans. (c)

4. निम्नलिखित में कौन सा एंजाइम डीएनए रिपलिकेशन के लिये आवश्यक है ?
- डीएनए पॉलीमरेज
  - आरएनए पॉलीमरेज
  - दोनों
  - इनमें से कोई नहीं

5. The salient feature absent in genetic code
- Unambiguous
  - Degenerate
  - Punctuation
  - Universal

Ans. (c)

5. आनुवांशिक कूट की प्रमुख विशेषता निम्नांकित में से नहीं है ?
- असंदिग्ध
  - अपहसित
  - चिन्हांकन
  - सार्वभौमिक

6. Which of the following pattern of chromosomal sex determination is present in human beings
- XX-XY pattern
  - XO-XX pattern
  - ZO-ZZ pattern
  - ZZ-ZW pattern

Ans. (a)

6. मानवों में सेक्स क्रोमोसोम की व्यवस्था कैसी होती है ।
- XX-XY
  - XO-XX
  - ZO-ZZ
  - ZZ-ZW

7. Which of the following is the sex linked recessive disease
- Sickle cell
  - Homophilia
  - Phenylketonuria
  - Down syndrome

Ans. (a)

7. निम्नलिखित में से कौन लिंग सहलग्न रोग है ?
- सिकल सेल एनीमिया
  - हीमोफीलिया
  - फीनाइल कीटोनूरिया
  - डाउन सिंड्रोम

8. SNPs stand for
- Some nucleotide polymorphism
  - Single nuclear polymoretoide
  - Some nuclear protein
  - Single nuclear polymorphism

Ans. (c)

8. एस0एन0पी0 क्या है ?
- स्मॉल न्यूक्लियोटाइड प्रोटीन
  - सिंगल न्यूक्लियर प्रोटीन
  - स्मॉल न्यूक्लियर प्रोटीन
  - सिंगल न्यूक्लियर पॉलिमरफ़ीज्म
9. The concept of natural selection was given by
- Lamarck
  - Weismann
  - Charles Darwin
  - Morgan

Ans. (c)

9. प्राकृतिक वरण का सिद्धांत किसने दिया था ?
- लामॉर्क
  - वीसमान
  - चार्ल्स डार्विन
  - मॉर्गन

10. The term nuclein is associated with
- DNA
  - RNA
  - Protein
  - All

Ans. (a)

10. न्यूक्लिन शब्द किससे संबंधित है ?
- डी0 एन0 ए0
  - आर0 एन0 ए0
  - प्रोटीन
  - उपर्युक्त सभी

11. Southern blotting technique is associated with
- DNA
  - RNA
  - Protein
  - None of these

Ans. (a)

11. साउदर्न ब्लॉटिंग विधि किससे संबंधित है ?
- डी0 एन0 ए0
  - आर0 एन0 ए0
  - प्रोटीन
  - इनमें से कोई नहीं

12. DNA finger printing cannot identify the
- Criminals
  - Identical twins
  - Dead person
  - Paternity test

Ans. (b)

12. निम्नलिखित में डी0 एन0 ए0 फिंगर प्रिंटिंग किसकी पहचान नहीं करती है ?

- a. अपराधी
- b. जुड़वा
- c. मृत व्यक्ति
- d. पितृत्व परीक्षण

13. "Struggle for existence" in natural selection theory was given by

- a. Lamark
- b. Fischer
- c. Darwin
- d. Muller

Ans. (c)

13. प्राकृतिक चुनाव में "अस्तित्व के लिये संघर्ष" का सिद्धांत किसने दिया था ?

- a. लामार्क
- b. फिसर
- c. डार्विन
- d. मूलर

14. Forelimbs or hind limbs of frog, man, horse and leopard is an example of

- a. Homologous organ
- b. Analogous organ
- c. Vestigial organ
- d. connecting organ

Ans. (a)

14. मेढ़क, मनुष्य, घोड़ा और चीता के अग्रपाद या पश्चपाद निम्नलिखित में किसका उदाहरण है?

- a. समजात अंग
- b. असमजात अंग
- c. अवशेषी
- d. योजक कड़ी

15. How many sex chromosomes are present in Human

- a. One pair
- b. 2 Pair
- c. 3 Pair
- d. 4 Pair

Ans. (a)

15. मानव में कितने जोड़े सेक्स क्रोमोसोम पाये जाते हैं ?

- a. एक जोड़ा
- b. दो जोड़ा
- c. तीन जोड़ा
- d. चार जोड़ा

### Two (02) Marks question

16. How many types of blood groups found in human beings? Which group is called universal donor?

Ans. Four types of blood groups are found in human beings. Blood group 'O' is called universal donor.

16. मनुष्य में कितने प्रकार का रक्त समूह पाया जाता है ? इनमें से कौन सा रक्त समूह सर्वदाता कहलाता है ?

17. What is Hemophilia? Why are hemophilic females extremely rare?

Ans. Hemophilia is X linked recessive diseases common in the Royal families of Europe. Since in females there is menstrual cycle after the attainment of puberty. There is a premature death of the females.

17. हीमोफिलिया क्या है ? मादा हीमोफिलिक अत्यधिक विरल क्यों होती है ?

18. Give the name of two genetic disorders along with their symptoms?

Ans.

Haemophilia, Delayed clotting of blood

Sickle-cell anaemia, Oxygen deficiency results in fits

18. दो आनुवांशिक विकास का नाम तथा उसके लक्षण बतायें।

उत्तर :- 1. हीमोफिलिया – रक्त के थक्का बनने की क्रिया में देरी

2. सिकेल सेल एनिमिया – ऑक्सीजन की कमी के कारण बेहोशी

19. Name termination codes. What is the role of termination code in protein synthesis?

Ans. UAG, UAA, UGA are termination codes. These codes are responsible for termination of translation during protein synthesis.

19. समापन प्रकृत का नाम बतायें। प्रोटीन संश्लेषण में समापन प्रकृत की क्या भूमिका है ?

20. Describe homologous organ with example?

Ans. Organs having same origin but having different functions. Wings of bat and hands of man

20. समजात अंगों का उदाहरण सहित व्याख्या करें।

### Three (03) Marks question

21. (a) Define male heterogamety (1+2 = 3 marks )

(b) How is sex determined in human being?

Ans. (a) In XX XY chromosomal sex determination pattern male is XY and produces two different types of gamete – one gamete with X chromosome and other with Y chromosome. This is known as male heterogamety.

(b) In human beings XX XY type of chromosomal sex determination pattern is present.

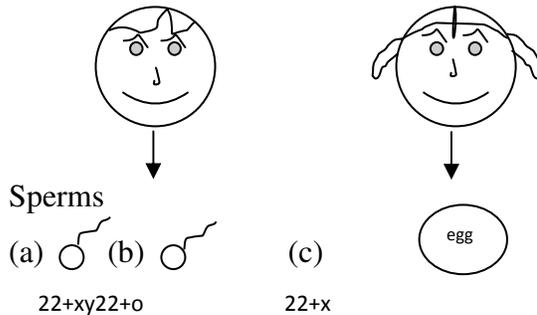
21. (a) नर विषमयुग्मता को परिभाषित करें।  
 (b) मानव में लिंग का निर्धारण कैसे होता है ?

22. What is linkage? Who proposed the term linkage?

Ans. When two or more genes express their characters together and have the ratio more than 50% than those genes are called linked and the phenomenon is known as linkage. Morgan Proposed this term.

22. सहलग्नता क्या है ? 'सहलग्नता' शब्द किसने दिया था ?

23. See the figures given below and answer the question that follow: (1+1+1)



- Which hereditary disease will develop if gamete (a) fuses with gamete (c)?
- Name the hereditary disease and disorder in case of gamete (b) fuses with gamete (c).

Ans. (a) Turner's Syndrome

(b) Klinefelter's Syndrome. Due to Klinefelter's syndrome, breast develops in males; the phenomenon is known as gynecomastia.

24. Name 3 types of RNA and mention their role in translation.

Ans. mRNA, tRNA, rRNA. mRNA carries the transcript for protein synthesis. tRNA carries the amino acids to the site of protein synthesis, and rRNA is the constituent of the ribosomes that are benches of protein synthesis.

24. आर० एन० ए० के तीन प्रकारों को लिखें तथा रूपांतरण में इसकी क्या भूमिका है ?

25. Answer the following:

- Arrange these human ancestors in correct evolutionary sequence: *Homo habilis*, *Homo erectus*, *Ramapithecus*, *Australopithecus*, *Dryopithecus*, *Homo sapiens*
- Give the cranial capacity of *Homo habilis*, *Homo erectus*

Ans. (i) *Dryopithecus*, *Ramapithecus*, *Australopithecus*, *Homo habilis*, *Homo erectus*, *Homo sapiens*

(ii) Cranial capacity of *Homo habilis* is between 650-800 cc, and cranial capacity of *Homo erectus* is about 900 cc.

25. निम्नलिखित का उत्तर दें।

(a) मानव वंशजों के विकास के सही क्रमों को लिखें। होमो हिबिलस, रामापिथेकस, ऑस्ट्रेलोपियेकस ड्रायोपिथेकस, होमो इरेक्टस, होमा सेपियंस।

(b) निम्नलिखित के दिमागी क्षमता को बतायें। होमो हिबिलस, होमो इरेक्टस

**Five (05) Marks question**

26. Give the answer of the following question: (1+2+2)

26. निम्नलिखित प्रश्नों के उत्तर दें।

a) Write the name of two autosomal chromosome disorders.

b) Write down the karyo type of Klinefelter's syndrome and Turner's syndrome?

c) Write down the name of cell and molecule which is being affected in sickle cell anemia and How?

Ans. (a) Sickle cell anaemia, Phenylketonuria

(b) XXY, and XO

(c) RBC, In sickle cell anaemia the glutamic acid of beta chain of the haemoglobin is replaced by valine.

27. Who proposed the Transformation principle? State the result A,B,C, D of following phenomenon, which occur during Transformation experiments. (1+4)

27. ट्रांसफोरमिंग प्रिंसिपल किसने दिया था ? ट्रांसफोरमिंग प्रयोग में नीचे दिये गये घटना से A,B,C, D का उत्तर दें।

a. S strain – inject into mice – A

b. R strain – inject into mice – B

c. S strain heat killed – inject into mice – C

d. S strain – inject into mice – D

(Heat killed)

+

R strain (Live)

Ans. Fredrik Griffith,

a. Mice die

b. Mice live

c. Mice live

d. Mice die

28. Answer of the following question: (1+1+1+2)

a. Give the names of enzyme involved in the following replication events

28. निम्नलिखित का उत्तर दें।

i. formation of Replication fork

ii. Discontinuous stands are joined by Okazaki fragments

iii. formation of new stands of DNA

b. What is a complementary gene? Give one example.

Ans. i) Helicase

ii) Ligase

iii) DNA polymerase III

b) When two non-allele genes interact and have combined effects. This type of interaction of genes is known as complementary genes. Example is purple colour in *Lathyrus odoratus*.

Purple colour is due to the interaction of two non-allelic genes C and P.

29. What are two basic differences between DNA and RNA? Name the body, which is involved in Translation Process. Mention roles of ribosome during Translation? (3+1+1)

29. डी० एन० ए० और आर० एन० ए० में दो मुख्य अंतर बतायें। ट्रांसलेशन की क्रिया में शरीर का कौन सा भाग सम्मिलित है, सूचीबद्ध करें। ट्रांसलेशन के समय राइबोजोम में मुख्य कार्य क्या है ?

Ans. DNA is a macro molecule and is located in the nucleus. RNA is micro molecule and is located in the cytoplasm. DNA has Thymine as a base where as Uracil is present in RNA in place of Thymine. DNA is double stranded. RNA is of single strand.

Ribosome

Ribosome is the bench where protein is being synthesized.

30. Answer the following questions:

30. निम्नलिखित का उत्तर दें।

- Mention three observations of Darwin on which he based his theory of Natural Selection?
- In the course of evolution the original population drifts to give the new population. Give the name of original population. Name the effect.
- Name the island where Darwin visited observed the natural process.
- Give the name of bird in which Darwin observed the divergent evolution

Ans. (a) Enormous power of fertility, struggle for existence and survival of the fittest were the observations of Darwin.

(b) Founder. It is called founders effect.

(c) Galapagos island

(d) Darwin finches.

31. Answer the following: (1+2)

31. निम्नलिखित का उत्तर दें।

(i) Expand HGP.

(ii) What were the goals HGP (any 4 points)

Ans. (i) HGP stands for Human Genome Project.

(ii) a. Identification of all the genomes

b. Determination of sequences of 3 billion chemical base pairs

c. Formation of database of this information

d. Improve tools of data analysis

(f) Transfer related technologies to other sectors

(g) Address the ethical, legal and social issues that may arise from the project