

# **KALIACHAK COLLEGE**

2021

## **ZOOLOGY (Honours)**

**Paper Code: ZHT - VI - A & B**

**[New Syllabus]**

### **INSTRUCTION TO THE CANDIDATES**

1. On the top of the every page of your answer script write your name, Registration no. session, Roll no. , Subject, Paper code, page no. , candidate signature and date of examination.
2. After completion of the examination take pictures or scan all the pages of your answer script serially as per the page number and make a single pdf file, Rename the file by your name and paper code.
3. Send the pdf file to this email id: [zoologykaliachakcollege@gmail.com](mailto:zoologykaliachakcollege@gmail.com)

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### **INSTRUCTION FOR MCQ QUESTIONS**

Candidates are required to attempt all questions (MCQ).

Below each question, four alternatives are given [i.e. (A), (B), (C), (D)].

Only one of these alternatives is 'CORRECT' answer.

The candidate has to write the Correct Alternative [i.e. (A)/(B)/(C)/(D)] against each Question No. in the Answer Script.

**Example** — If alternative A of 1 is correct, then write:

**1. — A**

There is no negative marking for wrong answer.

**Paper Code: ZHT - VI - A**

Full Marks: 10

Time: Thirty Minutes

Choose the correct answer.  
Answer *all* the following questions,  
Each question carries 1 mark.

1. Cholesterol contributes to which of the following properties of biological membranes of animals?

- A) Membrane rigidity
- B) Membrane fluidity
- C) Membrane permeability
- D) Membrane osmolarity

2. Fluid mosaic nature of biological membrane can be proved by

- A) Patch clamp technology
- B) Frap technique
- C) Electron spin resonance technique
- D) Cell-Cell fusion technique

3. The stage in which daughter chromosome move towards the poles of the spindle is

- A) Anaphase
- B) Metaphase
- C) Prophase
- D) Telophase

4.) The spindle apparatus form during which phase of mitosis?

A) Telophase

B) Anaphase

C) Metaphase

D) None of the above

5.) Mitochondria in human sperm cell are occupied at

A) Sperm head

B) Mead piece

C) Sperm tail

D) No mitochondria in sperm cell

6.) The number of phenotype in the  $F_2$  of the dihybrid will be

A) 2

B) 3

C) 4

D) 8

7.) Which of the following is NOT a stage in the 'Harshey- Chase experiment'?

A) Blending

B) Centrifugation

C) Infection

D) Conjugation

8.) Genetic combination of AA: XYY in Drosophila gives a

- A) Female
- B) Non-viable female
- C) Male
- D) Non-viable male

9.) 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.

10.) Sickle cell anaemia is

- A) X linked recessive inheritance
  - B) Autosomal dominant inheritance
  - C) Autosomal recessive inheritance
  - D) X linked dominant inheritance
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# ZOOLOGY (Honours)

Paper Code: ZHT - VI - B

[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minutes

*The figures in the margin indicate full marks.*

## Unit - 1 (Cell Biology)

1. Answer any *two* questions:

4×2=8

- (a) Describe briefly G protein mediated cell signalling.
- (b) Write a note on synaptonemal complex.
- (c) Write a brief note on exchange of chromatid segments in meiosis.
- (d) Describe active transport with a diagram.

2. Answer any one question:

12×1=12

(a) Describe important features of microfilament and state its function. What is endocytosis? Give a note on endocytic pathway with suitable diagram.

(4+2) + (2+4) = 12

(b) Elucidate your idea that G<sub>1</sub> is the most variable period of cell cycle. State the unique features of M phase.

6+6 = 12

(c) Write a short note on phagocytosis with suitable diagram. Write the process of pinocytosis with example.

6+6=12

**Unit - 2**  
**(Genetics)**

3. Answer any two questions:

4×2=8.

- (a) Give an experimental evidence in support of law of segregation.
- (b) Bombay phenotype is due to an epistatic effect- discuss it.
- (c) How does co-dominance differ from incomplete dominance?
- (d) What is the relation between linkage and independent assortment of genes?

4. Answer any *one* question:

12×1=12

- (a) What is Barr body? Elucidate your idea about sex determination in Man.

2+10=12

- (b) Briefly describe about following disorders:

4×3= 12

- i) Down syndrome

- ii) Turner's syndrome

- iii) Klinefelter syndrome

- (c) Briefly describe Aneuploidy. Mention some consequences of Aneuploidy in human. What are paracentric and pericentric inversion?

6+4+2=12

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