

TEST NO.5**CH – 5****BIOLOGY****Time Allowed: 15 Minutes****CLASS 9TH – 019****Paper: (Objective Type)****Maximum Marks: 12**

Note : Write answers to the questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the circle in front of A, B, C or D with pen ink to each question on the answer sheet provided.

Q.1	QUESTIONS	(A)	(B)	(C)	(D)
1.	In which phase of cell division spindle fibers appear?	Prophase	Metaphase	Telophase	Anaphase
2.	Phases of mitosis are.	One	Two	Three	Four
3.	Tumors are produced as a result of errors in.	Mitosis	Aitosis	Binary fission	Multiple fission
4.	Those cells which give rise to gametes are.	Somatic cells	Spindle fibers	Germ line cells	Synapsis
5.	In this phase cell increase the number of its may organelles and grows in size.	G1 Phase	G2 Phase	S Phase	G0 Phase
6.	Phase -1 can be divided into how many sub – Phases.	2	3	4	5
7.	Which of the following phase of cell division reduction division?	Meiosis-1	Meiosis-II	Mitosis	Anaphase
8.	In which stage of cell cycle the cell is preparing enzymes for chromosomes duplications?	G-1	G-2	S	M
9.	Division of cytoplasm is called.	Karyokinesis	Phragmoplast	Phagocytosis	Cytokinesis
10.	In which stage cell double in chromosome.	G1 Phase	G2 Phase	S Phase	G0 Phase
11.	Change in genes is called	Regeneration	Mutation	Growth	Budding
12.	The longest phase of Meiosis is	Metaphase -1	Anaphase-1	Telophase – 1	Prophase- 1

A B C D**A B C D****A B C D****A B C D****A B C D**

1	☒ B ☐ C ☐ D	4	☐ A ☐ B ☒ D	7	☐ A ☒ C ☐ D	10	☐ A ☐ B ☒ D	13	☐ A ☐ B ☐ C ☐ D
2	☐ A ☒ B ☐ C ☐ D	5	☒ B ☐ C ☐ D	8	☐ A ☐ B ☒ D	11	☐ A ☒ B ☐ C ☐ D	14	☐ A ☐ B ☐ C ☐ D
3	☒ B ☐ C ☐ D	6	☐ A ☒ B ☐ C ☐ D	9	☐ A ☐ B ☐ C ☒ D	12	☐ A ☐ B ☐ C ☒ D	15	☐ A ☐ B ☐ C ☐ D

نوٹ: معروضی سوال نامے کو توجہ سے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو پین کی سیاہی یا مارکر سے اس طرح پُر کریں کہ سیاہی دائرے سے باہر نہ نکلے۔ ایک سے زیادہ دائروں کو پُر کرنے یا کاٹ کر پُر کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

TEST NO.5

CH -5

BIOLOGY

Time Allowed: 1:45 hours

CLASS 9TH – 019

**Paper : (Essay Type)
Maximum Marks: 48**

(PART – I)

2. Write short answers to any FIVE (5) questions:

10

- (i) What is Anaphase?
- (ii) Define Apoptosis.
- (iii) Define Homologous Chromosomes.
- (iv) What is Go Phase?
- (v) What is Budding?
- (vi) Define Regeneration.
- (vii) Define G1 Phase?
- (viii) Define G2 Phase?

3. Write short answers to any FIVE (5) questions:

10

- (i) What is Interphase?
- (ii) Define Mitosis. Which biologist discover Meiosis?
- (iii) Define Malignant.
- (iv) What is Cell cycle?
- (v) What is Metaphase?
- (vi) What is Tumor and what are benign and Malignant Tumors?
- (vii) What is difference phase of mitosis?
- (viii) What is Meiosis.

4. Write short answers to any FIVE (5) questions:

10

- (i) Define Metastasis.
- (ii) Define Telophase.
- (iii) Define Karyokinesis.
- (iv) Define spindle.
- (v) Write significance of Meiosis.
- (vi) Define Cytokinesis?
- (vii) Define Synapsis?
- (viii) Define Phragmoplast.

(PART – I I)

Note: - Attempt any TWO questions.

- 5. (a) What is apoptosis? Describe Series of events in Apoptosis. **5**
- (b) What is cell cycle and describe all the phases of interphase in detail. **4**
- 6. (a) Explain the changes which take place during prophase of mitosis. **5**
- (b) Write a Short note Necrosis. **4**
- 7. (a) Describe the Significance of Meiosis. **5**
- (b) Describe Prophase of Meiosis in detail. **4**

2 write short answers to any
Five Question

(i) What is Anaphase?

A When a kinetochore spindle fibre connects with the kinetochore of chromosome. It starts to pull toward the originating centrosomes.

(ii) Define Apoptosis?
Apoptosis:-

Apoptosis is one of the main types of programmed cell death. Cell shrinks and becomes rounded due to the breakdown of cytoskeleton by enzymes.

(iii) Define Homologue chromosomes:-

A A pair of chromosomes having the same size and shape and carrying alleles for the same traits.

(iv) What is G₀ phase?

A In multicellular eukaryotes cells enter G₀ phase from G₁ and stop dividing. Some cells remain in G₀ for indefinite period neurons.

(v) Q What is budding?

A A type of asexual reproduction in which a bud develops as a small outgrowth on parent's body and forms the new individual.

(vi) Define Regeneration?

A Some organisms can regenerate parts of their bodies. The production of new cells is achieved by mitosis. For example sea star regenerates its lost arm through mitosis.

(vii) Define G₁ phase?

A After its reproduction a cell starts its cell cycle in G₁ phase. During this phase cell increase its supply of proteins increase the number of its organelles and grows in size.

(viii) Define G₂ phase?

A After the G₂ phase of interphase the division phase M. phase.

3) write short answers to any 5 Question

(i) What is interphase?

A Interphase is the time when a cell's metabolic activity is very high as it perform its various function.

(ii) Define Mitosis. which biologist discover Meiosis?

A A type of cell division which produce daughter cell identical to the parents.

(iii) Define Malignant?

They invade other tissues they are called malignant tumors and their cells are called cancer cells.

(iv) what is cell cycle?

Cell cycle is the series of events from the time a cell is produced until it completes mitosis and produce new cell.

(v) what is Metaphase?

when spindle fibers have grown to sufficient length some spindle fibers known as fibres kinetochores attach with kinetochore of chromosomes

(vi) what is tumour and what are benign and malignant? Sometimes mutation occur in such genes and cells continued to divide. It results in growth of abnormal cells called tumours. they invade other tissues they are called malignant.

(vii) what is difference phase
The process of mitosis is complex and highly regulated. There are two major phases the division of nucleus known as karyokinesis and the division of cytoplasm known as cytokinesis.

(viii) What is Meiosis

Meiosis is the process by which one diploid eukaryotic cell divides to generate four haploid daughter cells.

4 write short answers to any Five Question

(i) Define Metastasis

Such tumor can send cancer cells to other parts in body where new tumor may form. This phenomenon is called metastasis.

(ii) Define Telophase?

Telophase is a reversal of prophase. A new nuclear envelop forms around each other set of separated chromosomes.

(iii) Define karyokinesis?

Karyokinesis The division of nucleus is further divided into four phase. prophase metaphase anaphase and telophase

(iv) Define spindle

The microtubules thus formed are called spindle fibres.

(v) write significance of meiosis?
important of meiosis

The significant of meiosis for reproduction and inheritance was described in 1890 by german biologist August weismann. He pointed out that meiosis was necessary not only to maintain the number of chromosomes in the next generation but also to produce in next generation.

(vi) Define cytokinesis?

The division of the cytoplasm after nuclear division.

(vii) Define synapsis?

A junction between a neuron and another cell transmits nerve impulse from one neuron to the next neuron or to effector's cell

(viii) Define Phragmoplast?

A The Phragmoplast is a plant cell's specific structure that forms during late cytokinesis. It serves as a scaffold for cell plate assembly and subsequent

(PART II)

(9)

Note: Attempt any two
Question

5a) What is apoptosis, -----

A Apoptosis is one of the main types of programmed cell death. During apoptosis cell shrinks and become rounded due to the breakdown of cytoskeleton by enzymes. It chromatin undergoes condensation and nuclear envelope breaks. In this way nucleus spread in the form of several discrete chromatin bodies. cell membrane makes irregular buds known as blebs. Blebs break from the cell

and are now called apoptotic bodies. which are then phagocytosed by other cells.

Apoptosis can occur when a cell is damaged or undergoes stress condition. Apoptosis removes the damaged cell. preventing it from getting further nutrients. or to prevent this spread of infection. Apoptosis also gives advantages during development. For example during the formation of fingers. the cell between them undergo apoptosis and the digit separate.

b) what is cell cycle-----

A Cell cycle:-

cell cycle is series of event from the time a cell is produced until it completes mitosis and produce new cell. cell cycle consist of two major phase interphase and mitotic phase.

Mitotic Phase:

is a relatively short period of cell cycle. It alternates with the much longer interphase where cell prepare itself for division

Interphase:

interphase is the time when a cell metabolic activity is very high as its perform its

various infarction it is divided into three phase.

G1 Phase:-

After is reproduction a cell starts is cell cycle in G1 phase

During this phase cell increase its supply of proteins increase the number of its organelles or grow in size.

This phase is also marked by the synthesis of various enzymes that are required in next phase

S phase:

In this phase cell duplicates its chromosomes. As a result each chromosome consist of two sister chromatids.

G₂ phase:-

In the G₂ phase cell prepares proteins that are essential for mitosis mainly for the production of spindle fibres.

G₀ Phase:-

In multicellular eukaryotic cell enter G₀ phase from G₁ and stop dividing. Some one remain in G₀ for indefinite period of neurons.

6a) Explain the changes with

A Pro Phase of mitosis:-
Normally the genetic

materials in nucleus is in a loose thread-like form called chromatin

At the onset of prophase chromatin condenses into highly ordered structures called chromosomes. Since the genetic materials has already been duplicated either in S phase each chromosomes is made of two sister chromatids bound together at the same centromere. Each chromosomes also has kinetochore at centromere. There are two centrioles. Each centriole duplicate and thus two daughter centrosomes are formed. Both centrosomes migrate to the opposite poles of

15
cell. The microtubules thus formed are called spindle fibres. Complete set of spindle fibres is known as mitotic spindle. By this time nucleolus and nuclear envelopes have degraded and spindle fibres have invaded the central phase.

b) write short note - —

Necrosis:-

Necrosis is the accidental death of cell and living tissues. Necrosis is less sequential than apoptosis. There are many causes of necrosis including injury, infection, cancer etc. Necrosis may occur when a cell is given hypoxic environments.

During necrosis there is a release of special enzymes from lysosomes. Lysosomes enzymes break cellular components and may also be released outside cell to break surrounding cells. Cells that die by necrosis may also release harmful chemicals that damage other cells.

1a) Significance of Meiosis

Meiosis:-

The significance of meiosis for reproduction and inheritance was described in 1890 by German biologist August Weismann.

Maintenance of the chromosome number in next generation:-

Meiosis is essential for sexual reproduction in humans. Diploid germ cells or germ line cells undergo meiosis to produce haploid gametes. Male and female gametes unite to form diploid zygote, which undergoes repeated mitosis and develops into a new diploid human.

Production of variation in next generation:-

The chromosomes pairs of each parent undergo crossing over during meiosis. So daughter cell gametes have genetic variation. When gametes fuse and form zygote.

ERRORS IN MEIOSIS:-

During anaphase, chromosomes separated and go to opposite poles with during anaphase II sister chromosomes separated. It is called disjunction:

Some time the separation is not normal and

It is called non-disjunction. It results in abnormal chromosomes.

number in next generation.
For example. 47 or 45
chromosomes in humans.

b) Describe prophase of
Meiosis:-

A prophase is the longest
phase in meiosis.
during this stage
chromatin condenses into
chromosomes. The homologous
chromosomes line up
with each other. form
pairs by a process is
called synapsis. Each
pair of homologous
chromosomes is called
bivalent. Each bivalent has
four chromosomes so it
may also be called a
tetrad. The two non
sister chromatids of
homologous chromosomes
join each other at

(28)

Certain points along their length. These points of attachment are called chiasmata. In the next stage the non sister chromatids of homologue chromosomes exchange their segments. The phenomenon is known as Crossing over. Two kinetochores of chromosomes while the spindle fibres attach with a pair of chromosomes. In mitosis we have seen that two kinetochore spindle fibres attach with one chromosome.