

**D****DE-1669****B. Sc. (Biotechnology) (Sem. I) Examination****March / April - 2016****BT - 02 : Cell Biology**

Time : 2 Hours]

[Total Marks : 50

સૂચના/Instructions :

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
B. Sc. (Biotechnology) (Sem. I)

Name of the Subject :
BT - 02 : Cell Biology

Subject Code No. : 1 6 6 9 Section No. (1, 2,.....) : NIL

Seat No. :

Student's Signature

- (2) પ્રશ્ન પત્રમાં કુલ ૫૦ પ્રશ્નો છે, બધા જ ફરજિયાત છે. દરેક પ્રશ્નનો (૧) એક ગુણ છે.
There are 50 questions each question carries one (1) mark and all are compulsory.
- (3) દરેક પ્રશ્નનો કાળજીપૂર્વક અભ્યાસ કરી સાચો વિકલ્પ પસંદ કરો.
Read the question carefully before selecting the correct option.

***O.M.R. Sheet ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ
O.M.R. Sheet-ની પાછળ છાપેલ છે.
Important instructions to fillup O.M.R. Sheet
is given on back side of the provided O.M.R. Sheet.***

- 1 Which of the following occurs in meiosis but not in mitosis ?
 - (A) Segregation of homologous chromosomes
 - (B) Synapsis of homologous chromosomes
 - (C) All of these
 - (D) Independent assortment

- 2 Numerous chemical, physical and biological stimuli are able to convert a normal culture into a cancerous one through a process called as _____.
 - (A) Transcription
 - (B) Translation
 - (C) Replication
 - (D) Transformation

- 3 Cancerous cells are characterised by _____.
 - (A) Controlled cell growth
 - (B) Normal biochemical functions
 - (C) Karyotype remains normal
 - (D) An uncontrolled cell growth

- 4 Mitosis results in
 - (A) Increase in the cell volume
 - (B) No change in the number of chromosome
 - (C) Reduction in number of chromosome
 - (D) Duplication of chromosome

- 5 Secondary cell wall of plants is located _____.
 - (A) Inside the Plasma membrane
 - (B) Inside the Primary wall
 - (C) Just beneath middle lamellae
 - (D) Outside the primary wall

- 6 Cancer cells have which of the characteristic difference from the normal cells ?
- (A) Loss of motility
 - (B) Loss of growth control
 - (C) All of these
 - (D) Loss of contact inhibition
- 7 Leukemia is a
- (A) Soft tissue cancer
 - (B) Kidney cancer
 - (C) Lung cancer
 - (D) Blood cancer
- 8 One of the major chemical component of cell coat, _____ a glycoprotein, is absent or drastically reduced in cancerous cells.
- (A) Fibronectin
 - (B) Chitin
 - (C) None of these
 - (D) Transferrin
- 9 Active transport _____.
- (A) Produces a toxic substances
 - (B) Releases energy
 - (C) Requires energy
 - (D) Produces ATP
- 10 What is not true for Plasmids ?
- (A) They are transferred between bacterial cells during conjugation
 - (B) They carry genes which allow bacteria to produce sex pilus
 - (C) None of these
 - (D) They are small, circular pieces of DNA

- 11 The brain of cell is
(A) Mitochondria
(B) Nucleus
(C) Cell membrane
(D) Cytoplasm
- 12 Mitochondria have first seen by
(A) Lipmann
(B) Robert Brown
(C) Altmann
(D) Robert Hooke
- 13 All organisms have cells as their basic unit and all have essentially the same _____.
(A) Physiology – Anatomy
(B) Animal cells have vacuoles
(C) Plant cells have small vacuoles
(D) Physiology – Biochemistry
- 14 The main difference between animal cell and plant cell is that
(A) Plant cell lack rigid cell wall
(B) Anatomy-Genetic code
(C) Biochemistry-Genetic code
(D) Animal cell lack rigid cell wall
- 15 What are not considered as true cells ?
(A) Cyanobacteria
(B) Virus
(C) Bacteria
(D) Fungi
- 16 Food is converted to energy in
(A) Chloroplast
(B) Mitochondria
(C) Nucleolus
(D) Nucleus
- 17 In higher plants the shape of chloroplast is
(A) Girdle shaped
(B) Cup shaped
(C) Ribbon shaped
(D) Discoid

- 18 Which of the following statements are true regarding endoplasmic reticulum?
(A) ER acts as an intracellular transporting system
(B) SER is involved in synthesis of lipids
(C) All of these
(D) ER provides structural framework to the cell
- 19 One of the basic properties of cell is that they can respond to external _____.
(A) Antigen
(B) Stimulus
(C) Chemicals
(D) pH change
- 20 Extra nuclear DNA is found in
(A) Ribosomes
(B) Endoplasmic reticulum
(C) Nucleus
(D) Chloroplast
- 21 The smallest known Bacteria-Mycoplasma has _____.
(A) No cell wall
(B) No genetic material
(C) None of these
(D) No ribosomes
- 22 Common virus with a polyhedral shape of 20-sided icosahedrons is _____.
(A) HIV
(B) Bacteriophage
(C) Adenovirus
(D) TMV
- 23 Example of Prokaryotes, capable of photosynthetic activities are _____.
(A) *Bacillus sp.*
(B) Archaeobacteria
(C) *E.coli*
(D) Cyanobacteria
- 24 The term "Cell" was first used by _____.
(A) Robert Hooke
(B) Rudolf Virchow
(C) De Vries
(D) Anton van Leeuwenhoek

- 25 Which type of cell extensions in Prokaryotes are used to transfer DNA from one cell to another ?
- (A) Fimbriae
 - (B) Flagella
 - (C) Prostheca
 - (D) Pili
- 26 _____ and _____ proposed the double helix model of DNA.
- (A) Schwann and Schleiden
 - (B) Brown and Virchow
 - (C) Fleming and Waldeyer
 - (D) Watson and Crick
- 27 _____ is a modern science in which genetics, physiology and biochemistry converge.
- (A) Cell Biology
 - (B) Biotechnology
 - (C) Biochemistry
 - (D) Molecular biology
- 28 Limit of human eye is around _____ μm
- (A) 100
 - (B) 90
 - (C) 50
 - (D) 10
- 29 The sedimentation constant of ribosome is generally 70S. It breaks up into two subunits whose sedimentation constants are :
- (A) 40 S and 30 S
 - (B) 60 S and 10 S
 - (C) 50 S and 30 S
 - (D) 50 S and 20 S
- 30 Which is unit of asexual reproduction, that is adapted for dispersal and survival also ?
- (A) Gametes
 - (B) Cysts
 - (C) All of these
 - (D) Spores

- 31 What is the characteristic of a cyst ?
 (A) It helps that microbes to disperse easily from an unfavourable environment
 (B) The cyst walls of bacteria are not formed by thickening of cell walls
 (C) They are more resistant than endospores
 (D) It is not a resting stage
- 32 Which membrane is considered as biological membrane ?
 (A) Cell membrane
 (B) Glycocalyx
 (C) Nuclear membrane
 (D) Cell wall
- 33 What is true for Gram positive bacteria ?
 (A) *Salmonella sp.* is one of its example
 (B) They have a lipopolysaccharide-lipoprotein phospholipid outer membrane
 (C) They don't stain purple with crystal violet stain
 (D) Their cell wall consists of many layers of peptidoglycan and also contain teichoic acids
- 34 The light stained and diffused region of chromatin is known as _____.
 (A) Heterochromatin (B) Chromatin
 (C) None of these (D) Euchromatin
- 35 Nucleus is absent in _____.
 (A) RBC, Sieve cells and bacteria
 (B) RBC's only
 (C) None of these
 (D) Red Blood Cells and bacteria
- 36 Protein responsible for flagella and cilia movement is _____.
 (A) Myosin (B) Dynein
 (C) Tubulin (D) Actin
- 37 Keratin, Vimetins, Lamin etc. are examples of _____.
 (A) Microtubules
 (B) Intermediate filaments
 (C) Cell wall
 (D) Microfilaments
- 38 Which of the statement is true regarding chloroplast ?
 (A) Chloroplast is the site of photosynthesis
 (B) Chloroplast is responsible for the synthesis of carbohydrates
 (C) All of these
 (D) It is a double membrane bound organelle
- 39 All the following substances pass through cell membrane except _____.
 (A) CO₂ (B) O₂
 (C) H₂O (D) H⁺
- 40 Which of the following cell organelle brings about lyses inside and outside the cell ?
 (A) Glyoxysome (B) Peroxisomes
 (C) Golgi apparatus (D) Lysosomes

- 41 Semiautonomous organelle in the cell is
 (A) Golgibodies (B) Chloroplast
 (C) Endoplasmic reticulum (D) Peroxisomes
- 42 Continuous variations are attributed to
 (A) Mutation
 (B) Crossing over
 (C) Chromosomal aberrations
 (D) Polyploidy
- 43 If Golgi apparatus functions as a secretary organelle, then we would expect to find the most abundant Golgi complexes in _____.
 (A) RBC's (B) Pancreas
 (C) Muscle cells (D) Neurons
- 44 Which of the following organelle is involved in cell wall synthesis ?
 (A) Chloroplast
 (B) Golgi apparatus
 (C) Lysosome
 (D) Mitochondria
- 45 The G2 phase of the cell cycle is signified by the synthesis of _____.
 (A) ATP (B) DNA
 (C) mRNA (D) rRNA
- 46 During metaphase mitosis chromosomes
 (A) Move towards the poles
 (B) Line up at equator
 (C) Break and disintegrate
 (D) Undergo coiling
- 47 The process of ingestion of fluid material by the cell through the plasma membrane is
 (A) Absorption
 (B) Exocytosis
 (C) Adsorption
 (D) Pinocytosis
- 48 The pairing of homologous chromosomes is called _____.
 (A) Crossing over
 (B) Synapsis
 (C) Terminalisation
 (D) Tetrads
- 49 One main difference between meiosis and mitosis is that during meiosis
 (A) Duplication of chromosomes takes place during anaphase
 (B) Telophase stage does not occur
 (C) Mutual exchange of parts between chromatids of a chromosome takes place
 (D) The daughter cells are exactly like the parent cells
- 50 Which is the correct order of phases of meiosis ?
 (A) Leptotene, diakinesis, pachytene, diplotene and zygotene
 (B) Leptotene, zygotene, pachytene, diplotene and diakinesis
 (C) Diakinesis, diplotene, pachytene, zygotene and leptotene
 (D) Leptotene, pachytene, zygotene, diplotene and diakinesis