

**BIO
101**

NIGERIAN ASSOCIATION OF SCIENCE STUDENTS,
LAGOS STATE UNIVERSITY, OJO ENIGMA LED TEAM 16/17
MOCK EXAMINATION

Shop 4

COURSE CODE: BIO 101
TIME: 50 MINUTES

MATRIC NUMBER.....
TYPE 3

1. is an aromatic amino acid (a) Phenylanine (b) Threonine (c) Histidine (d) Lysine
2. is a programmed cell death (a) Apoptosis (b) Lipoptosis (c) Leropoptosis (d) Decidoposis
3. invented the simple light microscope (a) Anthony Van Leeuwenhoek (b) Antoni Van Leeuwenhoek (c) Antoni Van Leeuwenhoek (d) Antonio Van Liuwenhoek
4. 2 molecules of cysteine join to form (a) Cystine (b) Dicysteine (c) Supracysteine (d) None
5. A cell has 4 chromosomes, after mitotic and meiosis division, the number of chromosome in the daughter cell will be and respectively (a) 2 and 4 (b) 4 and 8 (c) 4 and 2 (d) 8 and 4
6. A positively charged amino acid is also (a) Basic (b) Acidic (c) Neutral (d) None
7. A process in which female organism reproduce without fertilization is called *Parthenogenesis*
8. A sequence of nucleotide bases codes for one Amino acids (a) 5 (b) 3 (c) 4 (d) 2
9. A sulphure containing amino acid is (a) methionine (b) Proline (c) Tyrosine (d) Serine
10. α and β depicts (a) Epimerism (b) Anomerism (c) Stereomerism (d) None
11. Organelle carries out the process of photosynthesis
12. is a pentose sugar (a) Arabinose (b) Threose (c) Dihydroxyacetone (d) None
13. taught Biomolecules (a) Mrs. Osinaike (b) Dr. Adu (c) Dr. Aderinola (d) Prof Adebiyi.
14. is a double cyclic base (a) Pyrimidine (b) Purine (c) Pimirode (d) Pelose
15. A tetra-aldoe is (a) Ribulose (b) Arabinose (c) Erythrose (d) Glucose
(a) Aldehydes and Ketones (b) Carboxylic and Ketones (c) Amino and Guanido (d) None
16. All cells come from (a) Pre-existing cells (b) Apoptesised cells (c) Dead cells
17. All enzymes are (a) Amino acids (b) Proteins (c) Dipeptides (d) None
18. DNA means.....
19. DNA molecular structure was proposed by And
20. Double membrane is absent in (a) Lysosome (b) Chloroplast (c) Nucleus (d) Mitochondria
(a) Fine and Coarse (b) Large and Small (c) Thigh and Root (d) None
21. Glucose is an epime of (a) Galactose (b) Talose (c) Glucose (d) Tagatose
22. Humans have chromosomes (a) 23 (b) 46 (c) 23 pairs (d) None
23. Mitosis is concerned with (a) Formation of gametes (b) Reduction of cells (c) Growth and Development (d) Variations
24. Nucleotides are composed of and (a) Nucleoside and Phosphate Group (b) Nucleoside and Bases (c) Nucleoside only (d) None
25. Nucleotides are pinned together by (a) Phosphoesta bond (b) Phophotriesta bond (c) Phosphodiester bond Nucleotides Linkage
26. One of the significance of meiosis is (a) Genetic stability (b) Growth (c) Genetic variations (d) Asexual reproduction

- reaction (a) Hydrolysis (b) Condensation (c) Liglit (d)
27. Peptide bond is formed from reaction (a) Hydrolysis (b) Condensation (c) Liglit (d)
None
28. Quaternary structure of proteins is stabilized by Bond (a) Hydrogen (b) Convalent (c)
Disulphide (d) Van Der Waal's
29. The units of inheritance in living organisms is the (a) Nucleus (b) Cells (c) Gene (d)
Cytoplasm
30. To enter or leave a cell, substances must pass through
(a) Watson and Crick (b) Hooke and Linneans (c) Ehrenberg and Beijernick (d) None
31. What is the most important nuclear organelle?
32. Which of the following is a polar amino acid (a) Glycine (b) Valine (c) Threonine (d) Isoleucine
33. Amino acids are joined together by (a) Glycosidic bond (b) Peptide bond (c) Ionic bond (d)
None
34. An hexaketose is (a) Psicose (b) Glucose (d) Galactose (d) Guloose
35. ATP means
36. AUG is a typical example of a (a) Codon (b) Base (c) Proteon (d) Amino Acid
37. Carbohydrates and polyhydrocy and
38. Cytokinesis means
39. D-Glucose and L-Glucose depicts (a) Stereomerism (b) Epimerism (c) Anomerism (d)
None
40. DNA are and (a) Parallel and Complimentary (b) Anti-parallel and
Complimentary (c) Anti-complimentary and Parallel (d) None of the above.
41. RNA means
42. Find functions to focus the light source on the specimen (a) Objective (b) Eye piece
(c) Condenser (d) Iris
43. The 2 adjustment knobs on a microscope are and
44. The 3 letter notation from for Glutamine is (a) Glu (b) Gln (c) Glt (d) Gle
45. The haploid number of chromosome in man is (a) 46 (b) 26 (c) 43 (d) 23
46. The homologous chromosomes are joined together at the (a) Centrioles (b) Nucleolus (c)
Spindle fibres (d) Centroinerves
47. The resting stage in mitosis is the (a) Anaphase (b) Interphase (c) Telophase
(d) Metaphase
48. The sequence of amino acid depicts its (a) Primary structure (b) Secondary Structure (c)
Tertiary structure (d) None
49. The simplest carbohydrates is (a) Glyceraldehyde (b) Threose (c) Erythrose (b) None
50. The two types of light microscope are and

LAGOS STATE UNIVERSITY, OJO

FACULTY OF SCIENCE

NIGERIAN ASSOCIATION OF SCIENCE

STUDENTS (NASS-LASU)

MOZEZFISH LED TEAM

(#TeamScientificProgress) 2014/2015

BIO 101 MOGIC EXAMINATIONS (50mins)

- Carbohydrate are substances which contain (a) C, H, N (b) C, H, and S (c) C, H, and O (d) None of the above
- The general formula for Carbohydrate (a) $(C_2H_2O)_n$ (b) $C_nH_{2n}O_n$ (c) $C_2H_nO_n$ (d) $(C_2HO)_n$
- All carbohydrate are (a) are aldehyde or ketones (b) contain several hydroxyl grp's (c) All of the above (d) None of the above
- Which one of this is not true (a) maltose = glu + glu (b) Lactose = glu + gal (c) Sucrose = glu + gal (d) None of the above
- Which one of this is not a polysaccharide (a) Starch (b) Glycogen (c) Cellulose (d) Waxes
- Starch has two components : (a) Amylose and Amylopectin (b) Amylose and Waxes (c) Glycoside and Amylose (d) Glycoside and Waxes
- The bond formed between two monosaccharaides is as a result of (a) Condensation (b) Hydrolysis (c) Hydroxylation (d) Isomeration
- Which of this is not a disaccharide (a) Maltose (b) Lactose (c) Glucose (d) Sucrose
- How many amino acids are commonly found in protein (a) 20 (b) Over 20 (c) 300 (d) Over 300
- Amino Acids are Amphoteric why? (3 marks) *they act as base and acidic*

- What is the general formula for Pentose (a) $C_5H_{10}O_5$

12. Peptide bond is formed through the elimination of water which is referred to as *dehydration*

- Which one of this is odd in Amino acids (a) NH_2 (b) $COOH$ (c) H (d) CN_2

- When the variable region of an amino acid is H, the amino acid is referred to as (a) Glycine (b) Leucine (c) Isoleucine (d) Methionine

- $-CH_2-CH_2-CH_2-CH_2-CH_2-NH_2$ if the empty space is the constant region then the amino acid is

- $-CH_2-OH$ if the space empty is the constant region then the amino acid is (a) Serine (b) Histidine (c) Lysine (d) Threonine

- Which of this are type of secondary structure of protein (a) α helix (b) β Plated Sheet (c) γ Plated Sheet (d) a & b

- $-CH_2-SH$ if the space empty is the constant region then the amino acid

- Denaturation of protein is caused by *elimination of water* (5 marks)

- DNA means

- Nucleic acid are made up of sub-unit called

- A nucleotide is made up of a nucleoside and a nitrogenous base True/False

- A DNA is made up of

A *G, T, C, A*

- An RNA is made up

A *G, T, C, U* (23 & 24 marks)

- DNA is (a) double stranded (b) single stranded (c) triple stranded (d) tetra stranded

- ~~AT = G~~ ~~triple~~ ~~it's~~
27. The bond that holds the two strands of a DNA together is called
28. The bond that holds that holds the nucleotide together in nucleic acids is referred to as
29. Which of this Scientist work on the DNA
(a) Mykell and Ballow (b) Peylon Roux (c) Karl Landsteiner (d) Watson and Crick
30. Four Properties of Enzymes
31. The site which enzymes bind to on substrate is referred to as
32. Which of this is the mechanism enzymes work (a) Reduction of activation energy to accelerate reaction
(b) Increment of activation energy to accelerate reaction (c) Reduction of substrate to increase reaction rate (d) Every of the Above
33. List the factors that affect the rate of a reaction (4 marks)
34. As the enzyme concentration increases, so does the rate
35. The microscopic brightness is adjusted fast using the (a) Fine adjustment knob (b) Coarse adjustment knob (c) Smooth adjustment knob (d) None of the above
36. A compound microscope is made up of basically two types of lens (a) Objective and magnification lens (b) Objective and Refractive lens (c) Refractive and reductive lens (d) None of the above
37. The Condenser in microscope does one of this (a) Put on the light (b) Increase the amount of light (c) Concentrate the light on the specimen (d) Put off the light
38. Which of this magnification lens is used to view oil immersion under the microscope (a) X4 (b) X10 (c) X40 (d) X100
39. The eye piece of a magnification lens is called (a) Objective lens (b) ocular lens (c) Retina lens (d) flesheapina lens
40. Name Two BIO101 tutorial master and a Lecturer
41. The Bond that hold amino acid is
42. The bond that holds the single unit of sugar together is called (a) Glycosidic bond (b) Phosphodiester bond (c) Peptide bond (d) Hydrophobic bond
43. Which of this is not a class of enzyme (a) Oxidoreductase (b) Transferase (c) Ligase (d) Hydrophobireductase
44. The enzyme which help convert lipid to fatty acid or glycerol is called
45. The Peptide bond is formed by prcess and is broken by Protein is made up of
46.
47.
48. Name five intricates of a blood sample (7 marks)
49. The enzyme found in the saliva
50. The first fluid secreted by a mammal's mammary gland after child birth is called (3 marks)
- 
- 

ANSWER ALL QUESTIONS.

STYL
XPER
unstressed

SUGAR

1. Carbohydrates are poly _____ aldehydes and ketones a. enoic b. carbonyl c. hydroxyl d. amino
2. The empirical formula of most carbohydrates is _____ a. $C(H_2O)_n$ b. CHO_n c. $C_nH_{2n}O_n$ d. $(CH_2O)_n$
3. A 5-carbon sugar with a carbonyl group at the end of the chain is _____ a. aldopentose b. ketopentose c. aldotetroses
4. α - and β -glucose are _____ a. anomers b. epimers c. enantiomers d. polymers
5. Glucose and galactose are _____ a. anomers b. epimers c. enantiomers d. polymers
6. Fructose has a _____ structure. a. pyranose b. furanose c. imidazole d. purine
7. Which of the following is a deoxy sugar a. glucosamine b. sialic acid c. fucose d. arabinose
8. Lactose is composed of _____ a. maltose and glucose b. fructose and glucose c. galactose and maltose d. galactose and glucose
9. The covalent bond linking 2 monosaccharide units together is called _____ a. glycosidic bond b. phosphodiester bond c. disulphide bond d. peptide bond
10. The monosaccharide units of sucrose are held together by _____ linkage a. α -1-4 b. β -1-4 c. α -1-2 d. α -1-6
11. Based on function polysaccharides are classified as _____ and _____ a. functional, skeletal b. homopolysaccharide, heteropolysaccharide c. structural, storage d. functional, storage
12. Based on composition they are classified as _____ and _____ a. functional, skeletal b. structural, storage c. functional, storage d. functional, storage
- Use the following to answer Question 13-15: a. Waxes b. Sphingolipid c. Glycerol-3-Phosphate d. Acylglycerols

Lipid Type

Backbone

Beg. of 13

Glycerol

Alcohol - phosphate

ii. Phosphoglyceride

14

iii. *sphingomyrl*

Sphingosine

6. The following are simple lipids except _____

a. Terpenes b. Steroids c. Prostaglandins d. waxes

7. The presence of fatty acids in some lipids makes them _____

a. soap b. saponifiable c. esters d. esterifiable

Triacylglycerols are _____ of fatty acids a. esters b. ethers c. soaps d. alcohols

ANSWER ALL QUESTIONS.

TIME: 1 Hr.

1. The empirical formula of most carbohydrates is _____ a. $C_6H_{12}O_6$ b. CH_2O c. $C_6H_{10}O_5$ d. $(CH_2O)_n$
2. A 6-carbon sugar with a carbonyl group at the end of the chain is _____ a. aldopentose b. ketohexose c. aldotetrose d. aldohexose
3. α - and β - glucose are _____ a. anomers b. epimers c. enantiomers d. polymers
4. Glucose and mannose are _____ a. anomers b. epimers c. enantiomers d. polymers
5. Fructose has a _____ structure a. pyranose b. furanose c. imidazole d. purine
6. Sucrose is composed of _____ a. maltose and glucose b. fructose and glucose c. galactose and maltose d. galactose and glucose
7. The covalent bond linking 2 monosaccharide units together is called _____ a. glycosidic bond b. phosphodiester bond c. disulphide bond d. peptide bond
8. The monosaccharide units of sucrose are held together by _____ linkage a. α -1,4 b. β -1,4 c. α -1,2 d. α -1,6
9. Based on function polysaccharides are classified as _____ a. functional skeletal b. homopolysaccharide/heteropolysaccharide c. structural, storage d. functional, storage

Use the following to answer Questions 10-12 a. Waxes b. Sphingolipid c. Glycerol-3-Phosphate d. Acylglycerols

Lipid Type Backbone

i. 10 _____

Glycerol

ii. 11 _____

iii. 12 _____

Sphingosine



13. The presence of fatty acids in some lipids makes them _____ a. soap b. saponifiable c. esters d. esterifiable
14. Triacylglycerols are _____ of fatty acids esters a. ethers b. soaps c. soap and alcohols
15. Lipids are _____ in water a. miscible b. soluble c. insoluble d. extractable
16. In a polypeptide chain the amino acid residues are held together by _____ bond a. glycosidic b. phosphodiester c. disulphide d. peptide
17. The sequence of amino acids in a polypeptide chain depicts its _____ structure a. primary b. secondary c. tertiary d. quaternary
18. The secondary structure of protein is held together by _____ a. hydrogen bond b. electrostatic interaction c. van der Waal force d. covalent bond
19. Nucleotides are composed of base, phosphate and _____ sugar a. pentose b. hexose c. tetrose d. amino acid
20. Nucleotides are held together by _____ bond in polynucleotides a. glycosidic b. phosphodiester c. disulphide d. peptide
21. RNA is _____ stranded while DNA is _____ stranded a. triple, double b. double, single c. double, triple d. single, double
22. DNA contains the following bases except _____ a. uracil b. cytosine c. guanine d. thymine

23. Thymine and adenine are held together by _____ bond. a. triple hydrogen b. triple covalent c. double hydrogen d. double covalent
24. The copying of genetic information from DNA to RNA is _____. a. replication b. translation c. transcription d. fragmentation
25. What is the correct term for the type of genetic mutation that can lead to abrupt speciation? A. Chromosomal aberration B. Chromosomal denaturing C. Gene mutation D. Inversion
26. Any attempt at explaining the origin of life must agree with the notion that no life comes into existence unless through a _____ and that life starts from somewhere. A. Nowhere B. Pre-existing life C. Nature D. DNA
27. Variation that cannot be used to group a given population into exclusive subgroups. A. Mutant variation B. Continuous variation C. Localized variation D. Discontinuous variation
28. What is the most important nuclear organelle? A. Ribosome B. Endoplasmic reticulum C. Chromosome D. Chloroplast
29. _____ is the type of cell division that leads to growth. A. Meiosis B. Anaphase C. Centromere D. Mitosis
30. A chromosome with single arm is _____. A. Acrocentric B. Pericentric C. Giant D. Telocentric
31. Diploid chromosome number of an organism is equally known as what? A. Gametic chromosome number B. Haploid chromosome number C. Somatic chromosome number D. Total chromosome number
32. If the haploid chromosome number of an organism is 24, what is the somatic chromosome number in the same organism? A. 12 B. 24 C. 23 D. 48
33. Identify the odd one out of the following. A. Leptonema B. Diplonema C. Zigonema D. Protozema
34. What is the major source of heritable variation? A. Gene B. Chromosome C. Mutation D. Chemicals
35. _____ is the type of mutation that can be lethal and can lead to abrupt speciation. A. Point mutation B. Chromosomal aberration C. Gene mutation D. Spontaneous mutation
36. Gametogenesis is a process whereby living organisms set aside half of their genome in readiness for sexual reproduction. This process is aided by what type of cell division? A. Anaphase B. Telophase C. Mitosis D. Meiosis
37. What is main distinction between Mitosis and meiosis? A. Chromosomes involved are most distinct at metaphase B. Chromosomes involved are bi-stranded C. The pairing of homologous chromosomes to form bivalents D. Spindle fiber formation from both poles to enact anaphase movement
38. Identify the odd one out of the following. A. Mutation B. Genetic drift C. Gene migration D. Speciation
39. The phenotype of an organism is a product of interaction between the organism _____ and _____. A. Genome and chromosome B. Chromosome and DNA C. Genome and environment D. Gene and nucleus
40. Given an organism with haploid chromosome number of 32 ($n=32$). What will be the somatic chromosome number in this same organism? A. $n=32$ B. $n=24$ C. $2n=62$ D. $2n=32$
41. The movement of chromosomes to the poles during anaphase of cell division is aided by a pair of _____. A. Centromere B. Spindle fibre C. Gene D. Chromatids

42. When a variable can be used to split a population to exclusive groups, such variable is said to be what?
 A. Discontinuous B. Continuous C. Convergent D. Parallel
43. One major difference between eukaryotic and prokaryotic cells is _____
 Absence of cytoplasm in prokaryotic cells c. Presence of membrane bound organelles in eukaryotic cells b.
44. A single celled organism is said to be _____
 a. Multicellular b. Monocellular c. Bicellular d. Unicellular
45. Protoplasm consists of _____
 a. Nucleus and Cytoplasm b. Cell Wall and Cytoplasm c. Nuclear membrane and Nucleus d. None of the above
46. The cell organelles responsible for protein synthesis are _____
 a. Endoplasmic reticulum b. Golgi bodies c. Ribosomes d. Nucleus
47. The membrane that envelopes the cytoplasm is called _____
 a. Nuclear envelope b. Plasmalemma c. Chitin d. Pectin
48. The seat of energy production is the _____
 a. Cytoplasm b. Nucleus c. Cell membrane d. Mitochondria
49. They help to package and transport materials in the cell. They are _____
 a. Golgi bodies b. Lysosome c. Cell walls d. Chloroplasts
50. The membrane that surrounds the vacuoles is called _____
 a. Protoplast b. Tonoplast c. Chloroplast d. Cell membrane
51. The organelles responsible for the breakdown of proteins, nucleic acid and lipids are called _____
 a. Lysosomes b. Ribosomes c. Autosomes d. Microsomes
52. One of the major function of smooth ER is _____
 a. Lipid synthesis b. Protein synthesis c. Photosynthesis d. All of the above
53. The part of the cell characterized by selective permeability of different materials is _____
 a. Nucleus b. Cytoplasm c. Plasmalemma d. Mitochondria
54. The mathematical equation used to denote the Hardy-Weinberg principle is
 a. $P^2 + 2pq - q^2 = 1$ b. $P^2 + 2pq - q^2 = 0$ c. $(p+q)(p+q) = 1$ d. $P^2 + 2pq + q^2 = 1$
55. The following are all assumptions of the Hardy-Weinberg principle EXCEPT _____
 a. The population size must be very small b. Mating within population must be random c. There mustn't be any migration of individuals into or out of the population d. Mutation must not occur
56. All the genes and their alleles in a population constitutes its _____
 a. Genetic drift b. Genetic flow c. Genetic pool d. Genetic equilibrium
57. Which of the following statements on MICROEVOLUTION is incorrect? _____
 a. They are usually non-directional b. They occur above species level
 They occur as changes over time d. They are not affected by Migration, Gene flow or Mutation
58. Which of the following statements on Natural selection is incorrect
 a. Individuals in a population have different traits which can be inherited
 b. Individuals in a population produce more young than environment can support
 c. Individuals that are best suited to their environment will leave more offsprings
 d. New offsprings does not alter the genetic makeup of the population
59. The study of Fossils is known as _____
 a. Ornithology b. Archeology c. Paleontology d. Biology
60. The most acceptable theory of the cause of dinosaurs extinction is _____
 a. Climatic changes
 b. Dinosaurs were unable to evolve quickly as the plants they were eating
 c. Competition with emergence of small scavenging mammals and birds
 d. giant asteroid crashing to earth causing tremendous amount of dust
61. Chemical evolution leading to origin of life occurred as _____
 a. RNA — Pre RNA — Prebiotic — DNA — Primordial
 b. Prebiotic — Pre RNA — RNA — DNA — Primordial

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- | | | | | |
|--------------|-----|--------|-----------------|-----------------|
| c. Prebiotic | RNA | DNA | Pre RNA | Primordial Cell |
| d. DNA | RNA | PriRNA | Primordial Cell | Prebiotic |
62. The _____ functions to focus the light source on the specimen A. objective B. eye piece C. condenser D. iris
63. The _____ of a microscope can be increased by increasing the amount of light. A. contrast B. resolution C. illumination D. depth of field
64. _____ refers to the number of shades in a specimen A. contrast B. resolution C. illumination D. depth of field
65. In figure 1. The part labelled III is _____ A. Stage clip B. Stage C. Stage Slide D. Stage Slide Cover
66. In Figure 2. The part labelled VI is _____ A. Condenser B. Light source C. Coarse focus C. Diaphragm
67. In Figure 1. The function of the part labelled II is to _____ A. Brighten the stage B. Give focus to the specimen C. Serve as surface to place the specimen D. Give sharp contrast
68. In Figure 2. the part labelled I is _____ A. Ocular lens B. Condenser lens C. Body tube D. Final image
69. In Figure 2. the part labelled III is the _____ A. Objective lens B. Transmission lens C. Projector lens D. Condenser lens
70. In Figure 2. the part labelled as V is _____ A. The specimen B. The stage C. The Clip D. The diaphragm.

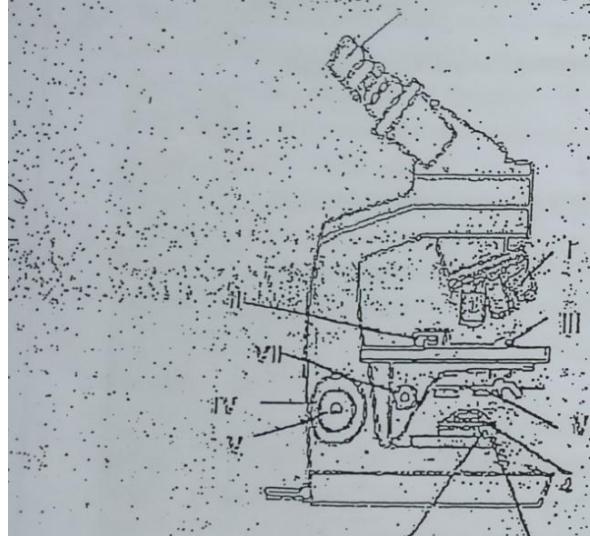


Figure 1.

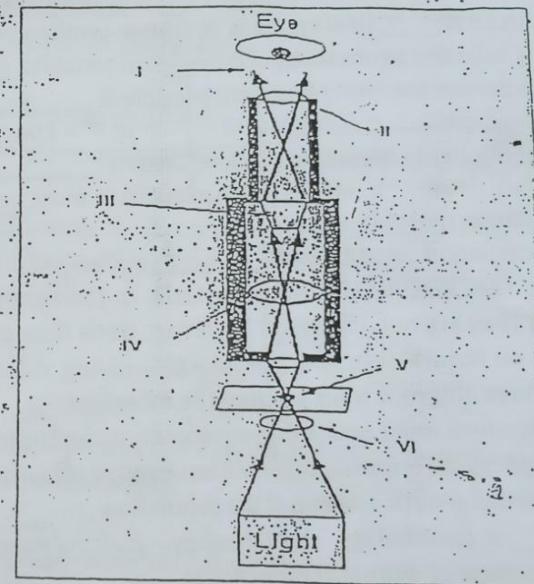


Figure 2.

Diaphragm - controls the amount of light passing thru the opening of the stage
 Done - adjust 1 amount of light that clarifies the specimen
 eyepiece - used to see the object under study

LAGOS STATE UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF ZOOLOGY AND ENVIRONMENTAL BIOLOGY
2014/2015 FIRST SEMESTER EXAMINATIONS, BIO 101 BASIC PRINCIPLES OF BIOLOGY, ANSWER ALL QUESTIONS. TIME: 1 HR.

1. Carbohydrates are poly _____ aldehydes and ketones. a. enoic b. carbonyl c. hydroxyl d. amino
2. The empirical formula of most carbohydrates is _____. a. $C(H_2O)_n$ b. CHO_n c. C_nH_2O d. $(CH_2O)_n$
3. A 5-carbon sugar with a carbonyl group at the end of the chain is _____. a. aldopentose b. ketopentose c. aldotetrose d. ketohexose
4. α - and β - glucose are _____. a. anomers b. epimers c. enantiomers d. polymers
5. Glucose and galactose are _____. a. anomers b. epimers c. enantiomers d. polymers
6. Fructose has a _____ structure. a. pyranose b. furanose c. imidazole d. purine
7. Which of the following is a deoxy sugar. a. glucosamine b. sialic acid c. fucose d. arabinose
8. Lactose is composed of _____. a. maltose and glucose b. fructose and glucose c. galactose and maltose d. galactose and glucose
9. The covalent bond linking 2 monosaccharide units together is called _____. a. glycosidic bond b. phosphodiester bond c. disulphide bond d. peptide bond
10. The monosaccharide units of sucrose are held together by _____. linkage. a. α -1-4 b. β -1-4 c. α -1-2 d. α -1-6
11. Based on function polysaccharides are classified as _____. and _____. a. functional, skeletal b. homopolysaccharide, heteropolysaccharide c. structural, storage d. functional, storage
12. Based on composition they are classified as _____. and _____. a. functional; skeletal b. structural, storage c. homopolysaccharide, heteropolysaccharide d. functional, storage
13. The following are simple lipids except _____. a. Terpenes b. Steroids c. Prostaglandins d. waxes
14. The presence of fatty acids in some lipids makes them _____. a. soap b. saponifiable c. esters d. esterifiable
15. Triacylglycerols are _____ of fatty acids. a. esters b. ethers c. soaps d. alcohols
16. Lipids are _____ in water. a. miscible b. soluble c. insoluble d. extractable
17. Use the following to answer questions 17 – 19. Globular protein. b. fibrous protein c. metalloprotein d. glycoprotein
18. Collagen is a _____. 28. Albumin is a _____. 29. Peptidoglycan is a _____. 30. Haemoglobin is a _____
19. The sequence of amino acids in a polypeptide chain depicts its _____ structure. a. primary b. secondary c. tertiary d. quaternary
20. The secondary structure of protein is held together by _____. a. hydrogen bond b. electrostatic interaction c. van der Waal force d. covalent bond
21. All enzymes are _____. a. DNA b. nucleotides c. fatty acids d. proteins
22. Nucleotides are composed of base, phosphate and _____. sugar a. pentose b. hexose c. tetrose d. amino
23. Nucleotides are held together by _____. bond in polynucleotides a. glycosidic b. phosphodiester c. disulphide d. peptide
24. RNA is _____. stranded while DNA is _____. stranded. a. triple, double b. double, single c. double, triple d. single, double
25. In double stranded nucleic acids the two strands are _____. and _____. a. supplementary, parallel b. complementary, antiparallel c. complementary, parallel d. double bonded, triple bonded
26. DNA contains the following bases except _____. a. uracil b. cytosine c. guanine d. thymine
27. Guanine is a _____. a. pyrimidine b. amino acid c. imidazole d. purine
28. Guanine and Cytosine are held together by _____. bond. a. triple hydrogen b. double covalent c. triple covalent d. double hydrogen
29. Thymine and adenine are held together by _____. bond. a. triple hydrogen b. triple covalent c. double hydrogen d. double covalent
30. Cytosine is a _____. a. pyrimidine b. amino acid c. imidazole d. purine
31. The copying of genetic information from DNA to RNA is _____. a. replication b. translation c. transcription d. fragmentation
32. A sequence of _____. nucleotide bases codes for one amino acid. a. 4 b. 3 c. 2 d. 1
33. This sequence of bases is known as a _____. a. anticodon b. sense c. codon d. antisense.
 (a) Mitosis is t. e division of Gametes (b) Eggs (c) Body cell (d) Sex cells.
34. The homologous chromosomes are joined together at the _____. (a) Centrioles (b) Nucleolus (c) Spindle fibres (d) Centromeres
35. The diploid number of chromosomes in Amoeba somatic cell is _____. (a) 50 (b) 60 (c) 46 (d) 40
36. The resting stage in mitosis is called (a) Anaphase (b) Interphase (c) Telophase (d) Metaphase.
37. One major difference between mitosis in plant and animal cells is _____. (a) Presence of centrioles in plant cell. (b) Formation of ester in plant cell (c) Absence of centrioles in animal cell (d) Presence of centrioles in animal cell
38. Mitosis is concerned about (a) Formation of gametes (b) Reduction of cells (c) Growth and development (d) Variations
39. The ability to reproduce lost parts in some organisms through mitosis is called _____. (a) Cell replacement (b) Reproduction (c) Development (d) Regeneration.

48. Ribosomes are produced in the _____
a. Nucleolus b. Centriole c. Vacuole d. None of the above e. All of the above
49. Proteins are synthesized in the _____
a. Endoplasmic reticulum b. Smooth Endoplasmic Reticulum c. Rough Endoplasmic Reticulum d. Nucleolus e. None of the above
50. The plant cell lacks _____
a. Cell membrane b. Ribosome c. Centriole d. Cytoplasm e. All of the above
51. Vesicles used for transport of materials by Golgi body are primarily produced by _____
a. Nucleus b. Smooth Endoplasmic Reticulum c. Lysosome d. Rough Endoplasmic Reticulum e. None of the above
52. Fats and lipids are produced by _____
a. Cell membrane b. Cytoplasm c. Smooth Endoplasmic Reticulum d. Rough Endoplasmic Reticulum e. All of the above
53. The "Roads" is _____
a. Connecting tissues b. Flagellum c. Endoplasmic Reticulum d. Ribosomes e. None of the above
54. Both plant and animal cells contains _____
a. Cell membrane, mitochondria, plastids, nucleus and cytoplasm
b. Cell membrane, mitochondria, Golgi apparatus, endoplasmic reticulum and cytoplasm
c. Cell membrane, mitochondria, Golgi apparatus, endoplasmic reticulum and cytoplasm
d. Cell membrane, mitochondria, ribosomes, chloroplast and cytoplasm
e. Cell membrane, mitochondria, Golgi apparatus, endoplasmic reticulum and cytoplasm
55. Food substances, water and mineral salts are stored in the _____
a. Cytoplasm b. Cell membrane c. Ribosomes d. Nucleolus e. Vacuole
56. The organelle that is lipid bi-layer in nature is _____
a. Nucleus b. Centriole c. Cell membrane d. Nucleoplus e. All of the above
57. The "Brain of the Cell" is _____
a. Cell membrane b. Nucleus c. Cytoplasm d. Ribosomes e. None of the above
58. The semi-permeable organelle that regulates the entry and exit of substances into the cell is called _____
a. Ribosomes b. Nuclear membrane c. Endoplasmic Reticulum d. Chromosomes e. Cell membrane
59. Hereditary information of the cell is stored in the _____
a. Ribosomes b. DNA c. Cell membrane d. Golgi apparatus e. None of the above
60. The cell wall found in plant is tough due to the presence of _____
a. Celulose b. Chlorophyll c. Celuclose d. Vacuole e. Cellulose
61. The two key words in the description of a microscope are:
a. Compound and magnifier b. Optical and lens c. Galileo and Compound d. Magnifier and optical e. Magnifier and lens.
62. Pick the ODD one out of the following options.
a. Ocular b. Objective c. Mirror d. Adjuster e. None of the above.
63. Pick the ODD one out of the following options.
a. The stand b. The stage c. The clip d. The objective e. The base.
64. The magnification of image after drawing was put at 280 U (micron). What is the capacity of eye-piece if the objective used was at very high power?
a. 24 b. 2 c. 7 d. 10 e. 40.
65. Which of these is not connected to the history of development of microscope?
a. Galileo b. Buska c. Leuween d. Hook e. Darwin.
66. Which part of the light microscope is used for focusing light through specimen to increase illumination?
(a) mirror (b) condenser (c) lens (d) rotating nosepiece (e) condenser and lens.
67. Two parts of a microscope used for focusing on specimen are (a) eye piece and rotating nose piece (b) fine tuning and coarse adjustment knob (c) condenser and diaphragm (d) objective and eye piece (e) a and b.
68. The scanning electron microscope (SEM) can be used to view
(a) internal structure of specimen (b) external architecture of specimen (c) both live and dead specimens (d) live specimens (e) All of the above.
69. Invention of the microscope is the basis of microbiology today
(a) Willaim Harvey (b) Gabriel Fahrenheit (c) Anton van Leeuwenhoek (d) willi (e) c and d.
70. Given an organism with haploid chromosome number of 32 ($n=32$). What will be the somatic chromosome number in this same organism?
 $2n = 32$
a. $n = 32$ b. $n = 24$ c. $2n = 62$ d.

HARVARD STATE UNIVERSITY, FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY
2009/2010 SESSION FIRST SEMESTER EXAMINATIONS
BIO 101: BASIC PRINCIPLES OF BIOLOGY DURATION: 111R. 30 MINS

INSTRUCTION: ANSWER ALL QUESTIONS.

1. To enter or leave a cell, substances must pass through:

- a. a microtubule b. the Golgi apparatus c. a ribosome d. the plasma membrane

2. The maximum size of a cell is limited by:
a. its need for enough surface area for exchange with its environment

- b. the number of organelles that can be packed inside

- c. the materials needed to build it d. the amount of flexibility it needs to be able to move

3. You would expect a cell with an extensive Golgi apparatus to:

- a. make a lot of ATP b. secrete a lot of material c. move actively

- d. perform photosynthesis

4. Mitochondria and chloroplasts share several common features; for example:

- a. both are capable of semiautonomous growth and reproduction

- b. neither are components of the endomembrane system

- c. each organelle synthesizes some of its own protein d. all of the above

5. Of the following organelles, which group is involved in manufacturing substances needed by the cell?

- a. lysosome, vacuole, ribosome b. ribosome, rough ER, smooth ER c. vacuole, rough ER, smooth ER d. smooth ER, ribosome, vacuole

6. A cell has mitochondria, ribosomes, smooth and rough ER, and other parts. Based on this information, it could not be

- a. a cell from a pine tree b. a grasshopper cell c. a yeast (fungus) cell d. a bacterium

7. A researcher made an interesting observation about a protein made by the rough ER and eventually used to build a cell's plasma membrane. The protein in the membrane was actually slightly different from the protein made in the ER. The protein was probably changed in the

- a. Golgi apparatus b. mitochondrion c. nucleus d. chloroplast

8. Which of the following clues would tell you whether a cell is prokaryotic or eukaryotic?

- a. the presence or absence of a rigid cell wall b. whether or not the cell is partitioned by internal membranes c. whether or not the cell carries out cellular metabolism d. whether or not the cell contains DNA

9. A plant cell was grown in a test tube containing radioactive nucleotides, the parts from which DNA is built. Later examination of the cell showed the radioactivity to be concentrated in the

- a. rough ER b. peroxisome c. smooth ER d. nucleus

10. The _____ carries on the process of photosynthesis

- a. cell wall b. chloroplast c. nucleus d. cytoplasm

11. Double membrane is absent in

- a. lysosome b. chloroplast c. nucleus d. mitochondrion

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13. The point where crossing over of chromatids takes place is _____
 a. chiasma b. kinetochore c. centromere d. chromomere
14. A cell has 4 chromosomes. After mitotic cell division, the number of chromosomes in the daughter cell would be _____
 a. 8 b. 4 c. 16 d. 32
15. Lysosomes are reservoirs of _____
 a. fats b. phospholipids c. hydrolytic enzymes d. ATP
16. Carbohydrates are poly _____
 aldehydes and ketones a. enolic b. carbonyl c. hydroxyl d. amino
17. The empirical formula of most carbohydrates is _____
 CHO_n a. C(H₂O)_n b. C_nH₂O_n c. (CH₂O)_n
18. A 5-carbon sugar with a carbonyl group at the end of the chain is _____
 aldopentose a. ketopentose b. aldohexose c. aldotetroses d. ketohexose
19. α - and β -glucose are _____
 anomers a. epimers b. enantiomers c. polymers
20. Glucose and galactose are _____
 a. anomers b. epimers c. enantiomers d. polymers
21. In a polypeptide chain the amino acid residues are held together by _____ bond
 a. glycosidic b. phosphodiester c. disulphide d. peptide
22. The sequence of amino acids in a polypeptide chain depicts its _____ structure
 a. primary b. secondary c. tertiary d. quaternary
23. A plant cell was grown in a test tube containing radioactive nucleotides, the parts in which DNA is built. Later examination of the cell showed the radioactivity to be concentrated in the _____
24. The _____ carries on the process of photosynthesis
 a. rough ER b. peroxisome c. smooth ER d. central vacuole or nucleus
25. The point where crossing over of chromatids takes place is _____
 a. chiasma b. kinetochore c. centromere d. chromomere
26. Double membrane is absent in _____
 a. lysosome b. chloroplast c. nucleus d. mitochondria
27. A cell has 4 chromosomes. After mitotic cell division the number of chromosomes in the daughter cell would be _____
 a. 8 b. 4 c. 16 d. 32
28. The network of endoplasmic reticulum is present in the _____
 a. nucleus b. golgi apparatus c. cytoplasm d. mitochondria
29. Lysosomes are reservoirs of _____
 a. fats b. phospholipids c. hydrolytic enzymes d. secretory glycoproteins
30. The 'Scavengers' or 'Digestive bags' of a cell are _____
 a. centrioles b. centromere c. lysosomes d. golgi bodies
31. Which structure includes all of the others?
 a. nucleolus b. nucleus c. chromosomes d. genes
32. Two functions of rough endoplasmic reticulum are to _____
 a. detoxify and transport drugs b. modify and activate hormones

HAGOS STATE UNIVERSITY, FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY
2009/2010 SESSION FIRST SEMESTER EXAMINATIONS
BIOLOGY/BASIC PRINCIPLES OF BIOLOGY DURATION: 110R: 30 MINS

INSTRUCTION: ANSWER ALL QUESTIONS.

1. To enter or leave a cell, substances must pass through:
a. a microvillus b. the Golgi apparatus c. a ribosome d. the plasma membrane.
2. The maximum size of a cell is limited by:
a. its need for enough surface area for exchange with its environment.
b. the number of organelles that can be packed inside.
c. the materials needed to build it. d. the amount of flexibility it needs to be able to move.
3. You would expect a cell with an extensive Golgi apparatus to:
a. make a lot of ATP b. secrete a lot of material c. move actively.
d. perform photosynthesis.
4. Mitochondria and chloroplasts share several common features; for example:
a. both are capable of semi-autonomous growth and reproduction.
b. neither are components of the endomembrane system.
c. each organelle synthesises some of its own protein. d. all of the above
5. Of the following organelles, which group is involved in manufacturing substances needed by the cell?
a. lysosome, vacuole, ribosome b. ribosamine, rough ER, smooth ER c. vacuole, rough ER, smooth ER d. smooth ER, ribosome, vacuole
6. A cell has mitochondria, ribosomes, smooth and rough ER, and other parts. Based on this information, it could not be:
a. a cell from a pine tree. b. a grasshopper cell. c. a yeast (fungus) cell. d. a bacterium
7. A researcher made an interesting observation about a protein made by the rough ER and eventually used to build a cell's plasma membrane. The protein in the membrane was actually slightly different from the protein made in the ER. The protein was probably changed in the:
a. Golgi apparatus. b. mitochondrion. c. nucleus. d. chloroplast.
8. Which of the following clues would tell you whether a cell is prokaryotic or eukaryotic?
a. the presence or absence of a rigid cell wall b. whether or not the cell is partitioned by internal membranes c. whether or not the cell carries out cellular metabolism d. whether or not the cell contains DNA.
9. A plant cell was grown in a test tube containing radioactive nucleotides, the parts from which DNA is built. Later examination of the cell showed the radioactivity to be concentrated in the:
a. rough ER b. peroxisome c. smooth ER d. nucleus.
10. The _____ carries on the process of photosynthesis.
a. cell wall b. chloroplast c. nucleus d. cytoplasm
11. Double membrane is absent in:
a. lysosome b. chloroplast c. nucleus d. mitochondria

12. The point where crossing over of chromatids takes place is _____
 a. chiasma b. kinetochore c. centromere d. chromatide
13. A cell has 4 chromosomes. After mitotic cell division the number of chromosomes in the daughter cell would be _____
 a. 8 b. 4 c. 16 d. 32
14. The network of endoplasmic reticulum is present in the _____
 a. nucleus b. golgi apparatus c. cytoplasm d. mitochondria
15. Lysosomes are reservoirs of _____
 a. fats b. phospholipids c. hydrolytic enzymes d. ATP
16. Carbohydrates are poly _____
 a. aldehydes and ketones b. enols c. carbonyl d. hydroxyl e. amino
17. The empirical formula of most carbohydrates is _____
 a. $C(H_2O)_n$ b. $C_6H_{12}O_6$ c. $C_6H_{12}O_4$ d. $(CH_2O)_n$
18. A 5-carbon sugar with a carbonyl group at the end of the chain is _____
 a. aldopenose b. ketopenose
 c. aldohexose d. ketohexose
19. α - and β - glucose are _____
 a. anomers b. epimers c. enantiomers d. polymers
20. Glucose and galactose are _____
 a. anomers b. epimers c. enantiomers d. polymers
21. In a polypeptide chain the amino acid residues are held together by _____ bond
 a. glycosidic b. phosphodiester c. disulphide d. peptide
22. The sequence of amino acids in a polypeptide chain depicts its _____ structure
 a. primary b. secondary c. tertiary d. quaternary
23. A plant cell was grown in a test tube containing radioactive nucleotides, the parts from which DNA is built. Later examination of the cell showed the radioactivity to be concentrated in the _____
24. The _____ carries on the process of phagocytosis
 a. cell wall b. chloroplast c. nucleus d. cytoplasm
25. Double membrane is absent in _____
 a. lysosome b. chloroplast c. nucleus d. mitochondria
26. The point where crossing over of chromatids takes place is _____
 a. chiasma b. kinetochore c. centromere d. chromatide
27. A cell has 4 chromosomes. After mitotic cell division the number of chromosomes in the daughter cell would be _____
 a. 8 b. 4 c. 16 d. 32
28. The network of endoplasmic reticulum is present in the _____
 a. nucleus b. golgi apparatus c. cytoplasm d. mitochondria
29. Lysosomes are reservoirs of _____
 a. fats b. phospholipids c. hydrolytic enzymes d. secretory glycoproteins
30. The 'Scavengers' or 'Digestive bags' of a cell are _____
 a. centrioles b. centromere c. lysosomes d. golgi bodies
31. Which structure includes all of the others?
 a. nucleolus b. nucleus c. chromosomes d. genes
32. Two functions of rough endoplasmic reticulum are to _____
 a. detoxify and transport drugs b. modify and activate hormones

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50. pentose b. hexose c. tetrose
 d. amino
54. Nucleotides are held together by _____ bond in polynucleotides
 a. glycosidic b. phosphodiester
 c. disulphide d. peptide
55. RNA is _____ stranded while DNA is _____
 a. single, single b. triple, double
 b. double, single c. double, triple
 d. single, double
56. In double stranded nucleic acids the two strands are _____ and _____
 a. supplementary, parallel b. complementary, parallel
 b. nonparallel c. complementary, parallel
 d. double bonded, triple bonded
57. Guanine is a _____ a. pyrimidine b.
 amino acid c. imidazole d. purine
58. Guanine and Cytosine are held together by _____ bond a. triple hydrogen b.
 double covalent c. triple covalent d. double
 hydrogen
59. Thymine and adenine are held together by _____ bond a. triple hydrogen b.
 triple covalent c. double hydrogen d.
 double covalent
60. The copying of genetic information from DNA to RNA is _____
 a. replication b. translation
 c. transcription d. fragmentation
61. The invention of the microscope led to the discovery and description of cells by _____ in 1655
 a. Galileo b. Hooke c. Watson
 d. Mendel
62. The two types of light microscope are _____ and _____
 a. complex and compound b. simple and complex
 c. simple and compound d. infrared and visible
63. In a microscope the _____ has the function to magnify the object
- A. objective lens B. eyepiece
 C. iris D. condenser
64. If the _____ is the light source on the specimen
 A. objective B. eyepiece
 C. condenser D. iris
65. The _____ of a microscope can be increased by increasing the amount of light
 A. contrast B. resolution
 C. illumination D. depth of field
66. _____ refers to the number of blades in a specimen
 A. contrast B. resolution
 C. illumination D. depth of field
67. The increase in the amount of light leads to
 a loss in _____
 A. contrast B. resolution
 C. illumination D. depth of field
68. In _____ microscopy only scattered light enters the objective lens
 A. fluorescence B. phase contrast
 C. Normaski D. dark-field
69. In electron microscopy _____ is used to analyze the specimen
 A. electrons B. light
 C. ultraviolet rays D. infrared rays
70. In the electron microscope, the condenser lens is
 A. glass B. mercury
 C. electro-magnet D. light

ANSWER ALL QUESTIONS.

1. Who observed cork cells under a microscope? (a) Hooke (b) Leeuwenhoek (c) Darwin (d) Galileo (e) none of the above.
2. What is the proper method for carrying a microscope? (a) With one hand on the neck and one hand on the base. (b) with both hands on the base (c) with both hands on the arm (d) with only one hand to prevent fingerprints and smudges (e) with only one hand on the arm.
3. Which of these is the best way to care for a microscope? (a) don't dismantle the microscope to clean inaccessible parts (b) don't clean the eyepiece with anything but lens tissue (c) don't exchange lenses or part of the microscope (d) clean immersion oil from objective lens after use (e) All of the above.
4. Cytokinesis means _____ (a) Cell division (b) Cell differentiation (c) Cell enlargement (d) None of the above
5. The two types of light microscope are _____ and _____ (a) complex and compound (b) simple and complex (c) simple and compound (d) infra red and visible.
6. The haploid number of chromosomes in man is _____. (a) 46 (b) 26 (c) 43 (d) 23 (e) 13.
7. What is main distinction between Mitosis and meiosis? a. Chromosomes involved are most distinct at metaphase b. Chromosomes involved are bi-stranded c. The pairing of homologous chromosomes to form bivalents d. Spindle fiber formation from both poles to enact anaphase movement
8. The number of chromosomes per nucleus of the product of meiosis is ____ number? a. Somatic b. Haploid c. Diploid d. Double
9. Centromere is a major landmark along the length of a chromosome. Identify one major importance of centromere to chromosome. a. Centromere position confers shape b. Centromere determines the chromosome number c. Centromere is the genetic material d. Centromere act like nucleus of a cell morphology on chromosomes
10. Identify the odd one out of the following: a. Mutation b. Genetic drift c. Gene migration d. Speciation
11. Naturally occurring gene or point mutation is termed what? a. Mutation of gene b. Chromosomal aberration c. Spontaneous point mutation d. Reverse mutation
12. The phenotype of an organism is a product of interaction between the organism _____ and _____. (a) Genome and chromosome b. Chromosome and DNA c. Genome and environment d. Gene and nucleus
13. Term used in Botany for development of embryo or seed without fertilization occurring is (A) Aggregation (b) Agitation (c) Apomixis (d) Embryogenesis (e) All of the above.
14. Actively dividing cells are said to be (a) Erratic (b) Hypogenic(c) Hyperkinetic (d) Meristematic (e) Spontaneous
15. Set of genes for any traits in organisms are called (a) Alleles (b) Characters (c) Gametes (d) Syngens (e) Types
16. The fertilization of an individual ovum by the sperm of another individual is known as (a) Allogamy (b) Autogamy (c) Autogeny (d) Autozygosity (e) Syngamy.
17. Pick out the TRUE statement (a) In every living cell cycle (a) Mitosis is preceded by Meiosis (b) Meiosis produces four daughter cells each with the same number of chromosomes as their mother cell (c) Meiosis produces four daughter cells each having half the number of chromosome as their mother cell (d) Mitosis produces four daughter cells each with the same number of chromosome as their mother cell (e) Mitosis produces four daughter cells each with the same number of chromosome as their mother cell.
18. Chromosome condenses and is made visible at (a) Anaphase (b) Cytokinesis (c) Metaphase (d) Prophase (e) Telophase
19. Genes are located on (a) Chromatin (b) DNA (c) Histones (d) RNA (e) Tubulins
20. The cell moves from the Interphase into the Cell Division stage when the _____ phase is ended (a) G₁ (b) G₂ (c) M₁ (d) M₂ (e) S
21. Genes are replicated during the _____ stage of the Interphase (a) G₁ (b) G₂ (c) M₁ (d) M₂ (e) S
22. The number of chromosomes in a diploid nucleus of *Vicia faba* is (a) 1 (b) 6 (c) 8 (d) 10 (e) 12
23. Chromosomes are aligned at the centre of the cell by the (a) Centromere (b) Cytosol (c) Golgi body (d) Mitochondrion (e) Spindle fibre
24. Nuclear membrane /envelope are broken down by _____ at _____ (a) Enzymes, Anaphase (b) Enzymes, Prophase (c) Hormones, Anaphase (d) Hormones, Prophase (e) None of the above
25. Based on function polysaccharides are classified as _____ and _____. (a) functional, skeletal (b) Homopolysaccharide, heteropolysaccharide (c) structural, storage (d) functional, storage e. None.

26. Nucleotides are composed of base, phosphate and _____ sugar a. pentose b. hexose c. tetrose d. amino acid
27. Nucleotides are held together by _____ bond in polynucleotides a. glycosidic b. phosphodiester c. disulphide d. peptide
28. RNA is _____ stranded while DNA is _____ stranded. a. triple, double b. double, single c. double, triple d. single, double
29. Saponifiable lipids contain a. soap b. fatty acid c. esters d. ethers
30. Triglycerols are _____ of fatty acids a. esters b. ethers c. soaps d. alcohols
31. _____ are the major component of cell membrane a. terpenes b. stearic acid c. triglycerides d. phosphoglycerides
- Use the following to answer Questions 32-34:
- a. Acidic amino acid b. Non polar amino acid c. Basic amino acid d. Aromatic amino acid
32. Lysine is a _____ 33. Alanine is a _____ 34. Tryptophan is a _____
35. In a polypeptide chain, the amino acid residues are held together by _____ bond. a. glycosidic b. phosphodiester c. disulphide d. peptide
36. The following are all assumptions of the Hardy-Weinberg principle EXCEPT a. The population size must be very large b. Mating within population must be non-random c. There must be no migration of individuals into or out of the population d. Mutation must not occur e. none of the above
37. All the genes and their alleles in a population constitutes its a. Genetic pool b. Genetic drift c. Genetic flow d. Genetic equilibrium e. Genetic variation
38. Which of the following statements on Allopatric speciation is incorrect a. They occur when a population is split into two b. The two subpopulations may not be geographically isolated c. The new species cannot interbreed with one another d. They are the most common form of speciation e. None of the above
39. Chromosomal mutation which occurs as a result of repetition of a set of genes is known as a. Deletion b. Polyploidy c. Duplication d. Inversion e. Euploidy
40. Which of the following is not one of Charles Darwin's observations
- a. Climate and other factors do not play a role in plant and animal diversity
- b. Members of the same species often change slightly in appearance after geographical isolation from one another
- c. Organisms of the past and present are related to one another
- d. Organisms living in oceanic islands often resembled organisms found living in a close mainland
- e. Only a few days is required for a new species to be formed from old ones
41. Charles Darwin's voyage on H.M.S. Beagle to Galapagos Island lasted for a. Five months b. three days c. Fifteen years d. Five years e. Fifty days
42. The genetic drift that occurs when a few individuals from a population colonizes new habitats thereby having a new colony with less variation is called a. Population bottleneck b. Founder effect c. Natural selection d. Genetic mutation e. None of above
43. The general belief is that life originated from a. Gases b. Ocean c. Thunder d. mud e. Light
44. Which of the following statements on Natural selection is correct
- a. Individuals in a population produce very few young that environment can support
- b. Individuals that are not well suited to their environment will leave more offspring
- c. New offspring alter the genetic makeup of the population
- d. Individuals in a population have different traits which can be inherited
- e. None of the above
45. The concentration of nerve tissue and receptors at the interior end of an animal's body is known as a. Tagmatisation b. Symmetry c. Segmentation d. Specialisation
- Cephalization
46. Dinosaurs appeared during the _____ era. a. Precambrian b. Palaeozoic c. Mesozoic d. Cenozoic e. Jurassic
- The evolutionary trend in segmentation involves a. Division of plant and animal body plans into series of repetitive segments b. Concentration of nervous tissues in one end of an organism c. Development from radial symmetry to bilateral symmetry d. Formation of a coelomic body cavity e. Possession of an incomplete digestive tract.