Kegn.Andarge W.G.Memorial School

Grade 12 Biology Exam exercise

I. Choose the correct answer from given alternative

1. Anaerobic cellular respiration occurs in:
   A. cyto plasm (cytosol) C. inner membrane of mitochondrial
   B. mitochondrial matrix D. inner membrane space of mitochondria
2. Chlorophyll is a pigment that absorbs in the _____ wave length of light.
   A. green blue and yellow C. green, yellow and a range
   B. violet, red and orange D. violet, blue and red
3. The function of phosphorylation of glucose during glycosis is to:
   A. energise the glucose molecule
   B. lock the glucose molecules inside the cell
   C. reduction of carbon of glucose
   D. A and B
4. Which of the following coenzymes that pick up- hydrogen (electrons) during cellular respiration?
   A. ATP and ADP B. H_2O and O_2 C. NAD and FAD D. ADP and Pi
5. Which of the following pigment directly involved in transformation of light energy to chemical energy?
   A. chlorophyll **b** B. chlorophyll **a** C. xanthophylls D. carotene
6. The calvin- Bensen cycle is analogous to the kreb's cycle in that.
   A. the starting and ending compound is five carbon compound.
   B. Both cycles takes place in the thylakoid membrane.
   C. the starting compound is regenerated.
   D. the entry compound is a two carbon fragment
7. The role of C_4 cycle is to increase the concentration of?
   A. water within the bundle sheath cells. C. RUDP within mesophyll cells.
   B. CO_2 within the bundle sheath cells. D. CO_2 within the mesophyll cells
8. Which one of the following is not true in the citric acid cycle?
   A. produces ATP C. release NADH + H^+ and $FADH_2$
   B. release CO2 D. phosphorylation of acetyl group
9. Which one of the following is not true in the movement of electrons from one molecules to the next in
   electron transport chain?
   A. The electrons gain same energy
   B. ATP synthace makes ATP as proton moves into matrix.
   C. Protons pumped into inner membrane space of mitochondria.
   D. the high energy electron lose some of their energy
10. In plants the importance of light during photosynthesis is:

A. splitCO_2 into carbon and O_2
B. serves as the final hydrogen acceptor
C. combine carbon and hydrogen
D. split water into hydrogen and oxygen.

11. The light reaction of photosynthesis occurs in the
A. stroma of chloroplast C. inter membrane space
B. thalakoid membrane of chloroplasts D. matrix of grana

12. How many ATP is produced from one glucose molecules during electron transport chain?
A. 4ATP B. 12ATP C. 34ATP D. 6ATP

13. One of the following is right condition for photorespiration.
A. equal amount of CO_2 and O_2 C. higher amount of CO_2 and lower O_2
B. higher amount of CO_2 and O_2 D. lower amount of CO_2 and higher O_2

14. How many NADH, $FADH_2$ and ATP is produced in krebcycle per glucose molecule?
A. 12 NADH, 4$FADH_2$ and 4ATP C. 6 NADH, 2$FADH_2$ and 2ATP
B. 10 NADH, 2$FADH_2$ and 4ATP D. 2 NADH, 1$FADH_2$ and 4ATP

15. Which of the following compound contains more energy per molecule than all the others?
A. NADH + H^+ B. ATP C. ADP D. $FADH_2$

16. Malaria is caused by a member of
A. protists B. Bacteria C. fungi D. virus

17. Azoto bacters and a nitrogen fixing bacteria are classified under.
A. spherical B. spiral – shaped C. rod- shaped D. comma – shaped

18. Which one of the following is not used to classify bacteria?
A. shape B. Gram's stain C. respiration D. None

19. Which part of the viral cell becomes incorporate with that of host cell and instructs the cell to produce more viruses?
A. DNA/RNA B. Capsid C. envelope D. transcriptase enzyme

20. The cell wall of bacteria mainly contains?
A. cellulose B. phospho lipids C. peptidoglycan D. proteins

21. A single – celled organisms that obtains its food by using photosynthesis is
A. protozoa B. algae C. viruce D. yeast

22. The cells of which group of micro- organisms can be described as prokaryotic?
A. viruses B. protozoa C. algae D. bacteria

23. What are the most frequent causative agents of food poisoning?
A. Bacteria B. protozoa C. viruse D. worms

24. On which one of the following principles are the most- the anit- HIV dry currently in use working?

A. Inhibition of enzyme action C. Digestive of viral particles

B. Degradation of viral RNA D. phagocytosis of the viruse

25. Which one of the following viruces uses bacteria to replicate its genetic materials?

A. HIV B. Herpes C. H_1N_1 D. Bacteriophage

26. Which of the following diseases camed by fungus?

A. phenomena B. farmer's lung C. sleeping sickness D. measles

27. Which groups of organisms in the ecosystem release nutrients locked up in dead of organisms?

A. parasites B. Decomporers C. Autotrophs D. carnivores

28. Which of the following is NOT true about mitochondria and chloroplast?

A. Both contain chlorrphyll C. Both have double membrane

B. Both contain nucleis acid D. Both transducer energy

29. If certain food stuff gave a positive results with Benedicts test only after it was hydrolyzed with hydrochloric acid, which of the following substances could it be?

A. Non – reducing sugar B. Nucleic acid C. lipid D. protein

30. Which of the following classes of organic molecules is the least important source of energy for cellular respiration?

A. lipid B. Nucleic acid C. carbohydrate D. proteins

31. Which one of the following is the smallest of all?

A red blood cells B. A viruse C. Bacterium D. An amoeba

32. Which are the four most abundant elements in living cells?

A. carbon, oxygen, sulfur and phosphorus C. carbon, oxygen, nitrogen and sulfur

B. carbon, oxygen, hydrogen and nitrogen D. carbon, oxygen, sulfur and magnesium

33. What do we cell a scientist who specializes in studying forsils?

A. Ecologist B. paleontologist C. Entomologist D. microbiologist

34. Which of the life- processes are important in the recycling of material in ecosystem?

A. Feeding and Excretion C. Death and Decomposition

B. Respiration and Breathing D. All of the above

35. Which one of the following has a unidirectional flow in an eco system?

A. Nitrogen B. carbondixide C. phosphorus D. Energy

36. Which of the following processes involved in water cycle is the conversion of gaseous water into liquid

water? A. Evaporation B. Transpiration C. condensation D. precipitation

37. Large geographical regions with their specific flora and fuana are known as

A. Biosphare B. Ecosystem C. Biomes D. population

38. Which of the following vertebrate has high proportion of endemic species in Ethiopia?

A. mammal B. Birds C. Amplibians D. Fish

39. All other factors remaining the same which of the following decreases the size of a populations?

A. Birth rate that is greater than death rate.
B. Emmigration rate that is less than immigration rate
C. Immigration rate that is greater than death rate.
D. emigration rate that is greater than death rate.

40. At which phase of the population growth curve is the fastest growth shown?

A. lag phase B. log phase C. stationary phase D. Death phase

41. Which of the following alternatives show the correct order in which the molecules are formed in living cells?

A. RNA → DNA → protein
B. protein → DNA → RNA
C. DNA → RNA → protein
D. DNA → protein → RNA

42. If one strand of DNA molecules contains ACTG bases, the complementary strand would contain.

A. UGAC B. TGAV C. GTCA D. TCAC

43. During protein synthesis which of the following molecules transport amino acids to the correct positions in the growing chain of polypeptide?

A DNA template B. messager RNA C. transfer RNA D. ribosomal RNA

44. Which one of the following stages of mitosis characterized by chromosomal condensation by coiling?

A. Anaphase B. metaphase C. prophase D. interphase

45. A pentose sugar connected to a nitrogenous base

A. Nucleotide B. Nucleoside C. Nuclicacid D. condom

46. Let **a**. separation of homologous chromosomal
b. separation of sister chromatids
c. pacing up of homologous chromosome

Which of the following sequences of events in meiosis is correct.?

A. a → b → c B. a → c → b C. c → b → a D. b → a → c

47. Which of the following enzyme is not participate in DNA replication?

A. RNA polmerace B. Helicase C. DNA polymerase D. single- stranded binding protein

48. Which of the following does not cause mutation?

A. ultraviolet light B. x – rays C. Natural selection D. Nitric acid

49. Which of the following occurs both during mitosis and meiosis?

A. reduction chromosome number C. replication of chromosomes

B. pairing up of homologous chromosomes D. No similar events occurs

50. Which of the following group of organisms believed to have a recent common an cestors?

A. Arthro pods, mollus and echinoderms C. Reptiles, birds and mammals

B. fish, Amphibians and reptiles D. mammals, fishes and birds

51. Which of the following provides evidence for evolution?

A. study of fossils B. study of embryo C. comparative anatomy D. All of the above

52. Darwins theory of evolution takes into account all of the following, except.

A. creation B. natural relection C. fecundity D. variation

53. Which of the following structures exemplifies homology rather than analogy?

A. wings of birds and wings of mosquitoes. C. wings of bats and wings of house flies

B. flipper of whales and four legs of horses D. all of the above

54. Lamarck contribution to science was.

A. acquired characteristics are in herited.

B. that evolution proceeds indirect the line of dev't.

C. that organism undergo change overtimes as a result of natural phenomenon.

A. all of the above

55. Polyploidy is most common in the _____ kingdom

A. Bacteria B. fungal C. plant D. Animals

56. Which one of the following refers a change in a gene?

A. Replication B. mutation C. protein synthesis D. Treamcription

57. Which of the following types of mutation is responsible for sickle cell anemia?

A. Addition of base pairs B. substitution of base pairs

C. Deletion of base pairs D. a shift in the reading frame of genetic code

58. Why is it that the typical diploid chromosome number if many organisms including man is an Even number?

A. It is only a coincidence C. Both parents contribute equal numbers of chromosomes

B. chromosomes duplicate before cell division . D. Meiosis reduce chromosome number

59. Which of the following types of chromosomes mutation involves loss of a chromosome segment?

A. Aneuploidy B. Translocation C. Deletion D. Duplication

60. What present of out DNA is coding on average?

A. 5% B. 90% C. 95% D. 85%

61. Which of the following is the main cause of mutation?

A. x – ray B. pesticide C. Accidental mistakes D. Some drugs

62. What is the type of mutation that arises from a change in the nucleotide sequence of the DNA at a particular locus of the chromosomes?

A. structural mutation B. Gene mutation C. Numerical mutation D. chromosomal mutation

63. A phenotypes characteristics of an organisms that appears only in individual of one sex is _____.

A. sex- influenced treait B. sex- linked traits C. sex- limited traits D. sex determination

64. From the following which one carries amino acids to the mRNA at the ribosome in order to from a polypeptide?

A. rRNA B. mRNA C. tRVA D. sRNA

65. Any spontaneous change in the amount, arrangement or structure of the DNA of an organisms is____

A. cloning B. Gene cloning C. mutation D. DNA replication

66. Which base sequence cannot occur in RNA?

A. TGCTAT B. GCUAGG C. CCUAAC D. AAGCCC

67. Which statement correctly describes the number of chromosomes in body cells and gametes?

A. Body cells and gametes are both diploid.
B. Body cells and gametes are both haploid.
C. Body cells are diploid and gametes are haploid
D. Body cells are haploid and gametes are diploid

68. Regarding the ‘ABO’ blood group inheritance, in which of the following mating a child of blood type “O” is produced?

A. AA x OO B. BB x OO C. AOxAB D. AO x BO

69. Which of the following enzymes in used to put together DNA- nucleotides into DNA?

A. DNA ligase B. DNA polymerase C. DNA lysace D. DNA helicase

70. Traits which are controlled by genes on the sex chromosomes are called:

A. sex- influenced B. sex- linked C. sex – limited D. sex – dimorphic

71. DNA fragments are separated according to their size by _____ in genetic finger print preparation.

A. PCR B. crossing – over C. Gel- electro phoresis D. Degraded

72. Which of the following theories is more accepted by biologist?

A. Darwinism B. Lamagkism C. Neo- Darwinism D. Aristotle

73. The paper entitled "**philosophic zoologique**" was written in 1809 by:

A. Darwin B. miller C. lamark D. Aristitle

74. Which of the following idea is not part of Darwins theory of evolution?

A. over reproduction. C. Existence of heritable variation.

B. use and disuse of body parts. D. Competition for scarse resources.

75. According to the theory go evolution as proposed by Charles Darwin, which one of the following is the most impatent **deriving force** of evolution?

A. mutation B. over- reproduction C. Natural relection D. variation

76. Which of the following pairs of molecules can give information about how much two species are evolutionary related to one another?

A. starch and cellulose C. DNA and proteins

B. lipids and carbohydrate D. carbohydrate and proteins

77. Which of the following is the best source of fossils?

A. volcanic rocks B. sedimentary rocks C. forest floors D. sandstone

78. The wings of birds and bats are the result of:

A. Divergent evolution C. stabilizing relection

B. convergent evolution D. Disruptive

79. Which of the following processes of evolution best explains the term known as " Industrial melanoma"?

A. Directional selection C. Adaptive selection

B. Disruptive selection D. stabilizing selection

80. Which of the following Hominids has the largest brain?

A. Homo erctus C. Austra lopithecns

B. Homo sapiens D. Ardipithecus ramidus

81. To which genus of human- like organisms does Lucy belong?

A. genus Homo B. genus Ardipitheus C. genus ramidus D. genus Australopithecus

82. Which of the fossils the nearest to the common ancastor of the hominids and apes?

A. Homo habilus B. Homo erectus C. Ardipitheus ramidus D. Australopithecus afarenis

83. Which of the following is true about Evolution?

A. Individuals evolve more slowly than populations

B. Individuals evolve, population do not

C. Individuals evolve by changing the gene pool

D. populations evolve, individual do not

84. Life is said begin on earth and transformed from simple forms to complex ones in millions of years. which branch of biology is concerned with the study of this process?

A. physiology B. Astro biology C. paleobiologys D. Entomology

85. To which kind of animal behaviou can the spinning of a web by spider be classified?

A. Learned behavior C. Instinctive behaviors

B. Experiential behavior D. Accidental

86. Which one of the following is not classified as a learned behavior?

A. Insight B. Innate C. Latent D. conditioned

87. Among the following , which one is a learned behviour?

A. Reflex action B. Habituation C. Imprinting D. fixed action pattern

88. Which of the following is the function of a queen in the community of honey bee?

A. guarding the hive from intruders C. Rearing the young of the community

B. lays eggs of the community D. Building the hive of the community

89. Which of the following is the correct route that connects?

A. Receptor → coordinator Effectors

B. Coordinator → Receptor Effectors

C. Receptor → Effectors Coordinator

D. Effectors → Receptor Coordinator

90. In a reflex action, to which of the following does the impulse reach last.

A. coordinator B. Receptors C. Efferent neurons D. Effector

91. Which of the following is the correct sequence of the steps in the process of viral infection?

A. Attachment → penetration → replication → assembly release

B. Attachment → penetration → assembly → release replication

C. Assembly → replication → penetration → release regeneration

D. regeneration → replication → Assembly → release penetration

92. Among the following, Which one is the best criterion to show that two populations belong to same species?

A. Morphological similarity C. Inhabiting the same geographic area

B. physiological similarity D. production of fertile offspring

93. The sheep “Dolly” is an example of which biotechnological manipulation of animals by humans?

A. Transgenic animal C. Cloned animal

B. Genetically engineered animal D. Hybrid animal

94. Which of the following is not true about the gene called (SRY)

A. It is found on the y – chromosome C. Testes develop in its presence

B. It determines maleness D. Females have two copies

95. Suppose the amino acid cording region in a mRNA is 1200 nucleotides long; how long is the protein

interms of amino acid number?

A. 1200 amino acids B. 600 amino acids C. 400 amino acids D. 300 amino acids

96. Use and disuse and the inheritance of acquired charachtershics is the idea of:

A. Oparin B. Lamark C. Darwin D. Aristotle

97. Neo- Darwinism is a modification of Darwin’s original theory that takes in to account:

A. the inheritance of acquired charachterstics and ethnology

B.behavioural psychology and molecular genetics

C. genetics and ecology

D. genetics and Ethology

98. Which one of the following is not homologous to the others?

A. The forelimbs of cat. C. The wings of flies.

B. The wings of birds. D. The forelimbs of human.

99. Which one of the fallowing is category of fossil?

A. Bones B. foot print C. burrows D. coprolite (animal faeces)

100. Which of the following cells are the most primitive than the others?

A. Archaebacteria B. Eubacteria C. Unicellular eukaryotes D. Blue green algae