1. A group of plants and animals with similar traits of any rank is

A.**Taxon**  B. Species C. Genus D. Order

2. Which is less general in characters as compared to genus

A. Family B. Division C. Class D. **Species**

3. What is the correct sequence?

1. Genus-species-order-kingdom B. Species-order-phylum-kingdom

C Species-genus-order-phylum D**. Kingdom-phylum-class-order**

4. Metabolism refers to

1. Release of energy B. Gain of energy C. Catabolism D. **Gain or release of energy**

5. What is nomenclature?

1. Genus name is written after species

B. **Genus and species names are written in italics**

C Genus and species have the same name

D. The first letter of genus and species name is capital

6. The term phylum was coined by

1. Linnaeus B. Cuvier C.  **Haeckel** D. Theophrastus

7. Binomial nomenclature was given by

1. **Linnaeus** B. Hugo De Vries C. John Ray D. Huxley

8. Species found in different geographical locations are called

1. Sympatric species B. **Allopatric species** C. Sibling species D. Morphospecies

9. What is a homonym?

1. **Identical name of two different taxa** B. Two or more names of same taxon

C Name given to a taxon in local language D. Species name repeats the generic name

10. The biologically cohesive unit of taxa is

1. Phylum B Order C. Genus D. **Species**

11. The scientific name of mango is

1. Mangifera indica B. *Mangifera Indica C****. Mangifera indica*** *D.* Mangifera Indica

12. *Nicotiana*is a ————-

1. Species B. Sub-species C.**Genus** D. Class

13. Energy flow and energy transformation in a living system follow

1. Biogenetic law B. Law of thermodynamics

C**. Law of limiting factor** D. Liebig’s law of minimum

14. Energy transformation is never 100% efficient because of

1. Catabolism B. **Entropy** C. Homeostasis D. Anabolism

15. The defining characteristic of living beings is

A.They reproduce B. They can digest their food

C **They respond to external stimuli**  D. They regenerate

16. In majority of higher animals and plants,\_\_\_\_\_ and \_\_\_\_\_ are mutually exclusive events.

A. growth; nutrition B. nutrition; consciousness

**C. growth; reproduction** D. reproduction; consciousness

17. The sum total of all the chemical reactions occurring in our body is known as

**A. metabolism** B. Growth C. Regeneration D. Reproduction

 18. Cell division occurs \_\_\_\_\_\_\_in plants and \_\_\_\_\_\_\_in animals.

**A. continuously, only up to a certain age** B. only up to a certain age, continuously

C. continuously, never D. once, twice

19. Which of the following are unique features of living organisms?

A. Growth and reproduction B. Reproduction and ability to sense environment

C. Metabolism and interaction **D. All of the above**

  20. Which of the following aspects is an exclusive characteristic of living things?

A. Isolated metabolic reactions occur in vitro. B. Increase in mass from inside only.

**C. Perception of events happening in the environment and their memory.**

D. Increase in mass by accumulation of material both on surface as well as internally.

**21. \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_ coined the term “Meiosis”.**

  A.Van Burin and Hertwig B. Boveri and Stuka

C.Walleye and Hofmeister **D.Farmer and Moore**

 22. Chromatids coiling in the meiotic and mitotic division is \_\_\_\_\_

 A. Plectonemic in both B. Paranemic in both

C.Paranemic in mitosis and plectonemic in meiosis

**D.Plectonemic in mitosis and paranemic in meiosis**

23. When there is an increase in the condensation of chromatin during the process of cell division –  A. Heterochromatin increases B. Euchromatin increases

**C.Differentiation of euchromatin & heterochromatin decreases**

D.Differentiation of euchromatin & heterochromatin increases

 24. The condensation of chromosomes is observed in \_\_\_\_\_\_

**A. Prophase** 1 B. Anaphase 1 C. Metaphase 1 D. None of the above

25. Nuclear DNA replicates in the \_\_\_\_\_\_\_\_ phase.

A. G2 phase B. M phase **C. S phase** D. None of the above

 26. \_\_\_\_\_\_\_\_\_ is a form of cell division which results in the creation of gametes or sex cells.

1. Mitosis **B. Meiosis** C. Miosis D. None of the above

27. \_\_\_\_ is the number of DNA in the chromosome at the G2 stage of the cell cycle

1. **1**  B. 2 C. 3 D. 0

 28. The stage which serves as a connecting link between meiosis 1 and meiosis 2

1. Interphase 2 B. **Interphase 1** C. Interkineses D. None of the above

2 9. The longest stage in the cell cycle is

1. **Interphase** B. Anaphase C.MetaphaseD. None of the above

 30. The \_\_\_\_\_\_\_ state implies the exit of cells from the cell cycle

1. S B. G1 C. G2 **D. G0**

 31. Synapsis is defined as the pairing of \_\_\_\_\_\_\_\_

1. Acentric chromosomes B. Non-homologous chromosomes

C.Any chromosomes **D.Homologous chromosomes**

 32. Mitosis can be observed in \_\_\_\_\_

A. Polyploid individual B. Diploid individual C.Haploid individual **D.Both (1,) (2) and (3)**

33. The spindle apparatus is formed during the \_\_\_\_\_\_\_\_ phase of mitosis**.**

  A.Telophase **B. Metaphase** C. Prophase D. Anaphase

 34. Cyclin is associated with \_\_\_\_\_\_\_\_\_\_\_

A. Leptospirosis  B. Glycolysis C. Cylosis  **D. Mitosis**

 35. If an individual wants to view diakinesis, which of these would be

A. Hair B. Leaf  C. Onion root  **D. Flower bud**

 36. Chromosome structure can be observed best during \_\_\_\_

  A.Anaphase **B. Metaphase** C. Prophase D. None of the above

**37. Which of these bacterial components is least likely to contain useful antigens?**

1. Cell wall B. Flagella **C. Ribosomes** D. Capsule

**38. Which of the following contains structures composed of N-acetylmuramic acid and N- acetylglucosamine?**

A .Mycoplasmas B. Amoeba **C. E.coli** D. Spheroplast

**39. The association of endotoxin in gram-negative bacteria is due to the presence of**

1. Steroids B. Peptidoglycan **C. Lipopolysaccharides** D. Polypeptide

**40. The prokaryotic cell membrane**

1. Contains metabolic enzymes B. Is selectively permeable

C.Regulates the entry and exit of materials **D.Contains proteins and phospholipids**

**41. Which of the statements regarding gram staining is wrong?**

**A.Mycobacterium tuberculosis stains blue because of the thick lipid layer**

B.Streptococcus pyogenes stains blue because of a thick peptidoglycan layer

C.Escherichia coli stains pink because of a thin peptidoglycan layer

D.Mycoplasma pneumoniae is not visible in the Gram’s stain because it has no cell wall

**42. Which of the following is not a recognised cause of diarrhoea?**

A.Vibrio cholera B. Escherichia coli

C. Clostridium perfringens **D. Enterococcus faecalis**

**43. Which of the following is a gram-positive eubacterium?**

1. Actinomyces B. Clostridium C. Rhizobium **D. Clostridium, Actinomyces**

**44. Which of the following microorganisms is not responsible for urinary tract infection?**

A.Proteus mirabilis B. Escherichia coli C. Klebsiella pneumonia **D. Bacteroides fragilis**

**45. Which of the following is diagnosed by serologic means?**

A.Actinomycosis  **B. Q-fever** C. Pulmonary tuberculosis D. Gonorrhea

**46. Diarrhoea is not caused by**

A.Shigella dysenteriae **B. Streptococcus pyogenes** C. Clostridium difficile D. Salmonella enteriditis

**47. The coagulase is done to differentiate**

**A.Staphylococcus aureus from Staphylococcus epidermidis**

B.Staphylococcus epidermidis from Neisseria meningitidis

C.Streptococcus pyogenes from Enterococcus faecalis

D.Streptococcus pyogenes from Staphylococcus aureus

**48. Prokaryotic cells are more resistant to osmotic shock than eukaryotic cells because**

**A.Their cell wall is composed of peptidoglycan**

B.They are selectively permeable

C.They contain osmoregulating porins

D.They block water molecules from entering the cell

**49. The bacterial genus where sterols are present in the cell membrane is**

1. Vibrio **B. Mycoplasma** C. Escherichia D. Chlamydia

**50. The bacterium that infects other gram-negative bacteria is**

1. Proteus mirabilis B. Haemophilus influenza **C. Bdellovibrio** D. Pseudomonas putida

**51. Which phage is used for phage display technique?**

A.T7  **B. M13** C. ƛ-phage D. ɸ6

**52. The tendency of an offspring to resemble its parent is known as**

A.Variation **B. Heredity** C. Resemblance D. Inheritance

53**. Who is known as the “Father of Genetics”?**

A.Morgan **B. Mendel** C. Watson D. Bateson

**54. The alternate form of a gene is**

1. Alternate type B. Recessive character C. Dominant character **D. Allele**

**55. The genotypic ratio of a monohybrid cross is**

1. **1:2:1** B. 3:1 C. 2:1:1 D. 9:3:3:1

**56. The crossing of F1 to either of the parents is known as**

1. Test cross **B. Back cross** C. F1 cross D. All of the above

**57. Which of the following statements is true regarding the “law of segregation”?**

A.Law of segregation is the law of purity of genes

B.Alleles separate from each other during gametogenesis

C.Segregation of factors is due to the segregation of chromosomes during meiosis

**D.All of the above**

**58. Homozygosity and heterozygosity of an individual can be determined by**

1. Back cross B. Self-fertilization **C. Test cross** D. All of the above

**59. An exception to Mendel’s law is**

1. Independent assortment **B. Linkage** C. Dominance D. Purity of gametes

**60. Pea plants were used in Mendel’s experiments because**

A.They were cheap  **B. They had contrasting characters**

C.They were available easily D. All of the above

**61. The smallest unit of genetic material which produces a phenotypic effect on mutation is**

1. **Muton**  B. Gene C. Recon D. Nucleic acid

**62. Mendel’s findings were rediscovered by**

1. Correns B. De Vries C. Tschermark  **D. All**

**63. Alleles are**

1. **Alternate forms of genes** B. Linked genes

C.Chromosomes that have crossed over D. Homologous chromosomes

**64. When the activity of one gene is suppressed by the activity of a non-allelic gene, it is known as**

1. Pseudo-dominance B. Hypostasis  **C. Epistasis** D. Incomplete dominance

**65. Cystic fibrosis is**

A.Sex-linked recessive disorder B. Autosomal dominant disorder

**C.Autosomal recessive disorder** D. Sex-linked dominant disorder

**66.. 9:7 ratio in the F2 generation represents**

1. Incomplete dominance B. Co-dominance **C. Epistasis** D. Complementary interaction

**67. A small amount of lethal mutation is always present in the population due to**

A.Positive selection B. Negative selection

C.Frequency-dependent selection **D. Mutation-selection balance**

**68. If a plant with genotype AaBb is self-fertilized, the probability of getting AABB genotype will be (A and B are not linked)**

A.½ B. ¼ C. ⅛ **D. 1/16**

**69. How many phenotypes can occur in the human blood group ABO with alleles IAIBi?**

1. 2 B. 3 **C. 4** D. 1

**70. The geometrical device that helps to find out all the possible combinations of male and female gametes is known as**

1. Bateson Square B. Mendel Square **C. Punnett Square** D. Mendel’s Cube

**71. Which term represents a pair of contrasting characters?**

1. Heterozygous B. Homozygous C. Codominant genes **D. Allelomorphs**

**73. Which of the following systems protects our body against disease-causing microbes?**

**(A) Immune system** (B) Digestive system (C) Excretory system (D) Respiratory system

**74. Which of the following immunity is present from our birth?**

**(A) Innate Immunity** (B) Active immunity (C) Passive immunity (D) Acquired immunity

**75. Neutrophils, basophil, lymphocytes, eosinophil and monocytes are examples of \_\_\_\_\_\_\_\_.**

(B) Physical barrier  **(B) Cellular barriers** (C) Cytokine barriers (D) Physiological barriers

**76. B-cells and T-cells are two types of cells involved in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

(A) Innate Immunity (B) Active immunity (C) Passive immunity **(D) Acquired immunity**

**77. The common disorders caused by a poor immune system include \_\_\_\_\_\_\_\_**

**(A) Epidemic Diseases** (B) Deficiency diseases (C) Autoimmune diseases (D) None of the above

**78. Which of the following statements is true about Passive Immunity?**

(A) This immunity causes reactions (B) This immunity develops immediately

(C) This immunity lasts only for a few weeks or months **(D) All of the above.**

**79. The branch of biology involved in the study of immune systems in all organisms is called\_\_\_\_\_\_\_\_\_.**

(A) Botany (B) Microbiology **(C) Immunology** (D) Biotechnology

**80. Which of the following cells is involved in cell-mediated immunity?**

**(A) T-cells** (B) B-cells (C) Mast cells (D) Both T and B cells

**81. Which of the following conveys the longest-lasting immunity to an infectious agent?**

**(A) Active immunity** (B) Passive immunity (C) Both (a) and (b) (D) None of the above

**82. Which of the following does not act as a protecting barrier for the body surface?**

(A) Skin (B) Mucus (C) Gastric acid **(D) Salivary amylase**

**83. Which of the following cells is involved in humoral immunity?**

(A) T-cells (**B) B-cells** (C) Mast cells (D) Both T and B cells

**84. Which of the following immunity is obtained during a lifetime?**

(A) Innate immunity (B) Active immunity (C) Passive immunity **(D) Both (b) and (c)**

**85. Skin, body hair, cilia, eyelashes, the respiratory tract and the gastrointestinal tract are examples of \_\_\_\_\_\_\_\_.**

**(A) Physical barrier** (B) Cellular barriers (C) Cytokine barriers (D) Physiological barriers

**86. Cells Involved In Innate Immunity are\_\_\_\_\_\_\_\_\_.**

(A) Phagocytes (B) Macrophages (C) Natural Killer Cells **(D) All of the above**

**87. Which of the following immunity is called the first line of defence?**

**(A) Innate Immunity** (B) Active immunity (C) Passive immunity (D) Acquired immunity

## 88****. Restriction enzymes were discovered by****

**A.Smith and Nathans** B. Alexander Fleming C. Berg D. None

**89. Bacteria protect themselves from viruses by fragmenting viral DNA with**

A.Ligase **B. Endonuclease** C. Exonuclease D. Gyrase

**90. Klenow fragment is derived from**

A.DNA Ligase **B. DNA Pol-I** C. DNA Pol-II D.Reverse Transcriptase

**91. Southern blotting is**

1. Attachment of probes to DNA fragments
2. **Transfer of DNA fragments from electrophoretic gel to a nitrocellulose sheet**
3. Comparison of DNA fragments to two sources
4. Transfer of DNA fragments to electrophoretic gel from cellulose membrane

**92. ELISA is**

A.Using radiolabelled second antibody B. Usage of RBCs

C.Using complement-mediated cell lysis

**D.Addition of substrate that is converted into a coloured end product**

**93. The Golden Rice variety is rich in**

A.Vitamin C **B. Β-carotene and ferritin**  C.Biotin D.Lysine

**94. The DNA fragments have sticky ends due to**

A.Endonuclease **B. Unpaired bases** C. Calcium ions D. Free methylation

**95. Plasmids are used as cloning vectors for which of the following reasons?**

A.Can be multiplied in culture **B. Self-replication in bacterial cells**

C.Can be multiplied in laboratories with the help of enzymes

D.Replicate freely outside bacterial cells

**96. The human genome project was launched in the year**

A.1980 B. 1973  **C. 1990** D. 1989

**97. The vaccines prepared through recombinant DNA technology are**

**A.Third generation vaccines** B. First-generation vaccines C.Second-generation vaccines D.None

**98. Which is a genetically modified crop?**

A.Bt-cotton B. Bt-brinjal C. Golden rice **D. All**

**99. PCR technique was invented by**

**A.Karry Mullis** B. Boyer C. Sanger D. Cohn

**100. The first transgenic plant to be produced is**

A.Brinjal **B. Tobacco** C. Rice D. Cotton