MCQ. Genetics with answers

Q1) Choose the best answer for the following questions:

1. What are the repeating units of nucleic acids?

   A. phosphate molecules
   ☺ nucleotides
   C. bases
   D. sugar molecules

2. Chromosomes measurements are generally taken during

   A. Interphase
   B. Prophase
   C. Anaphase
   ☺ Non-of these

3. The most common form of severely affected people who are having more than 1000 repeats of the CTG triplet are called

   ☺ Myotonic dystrophy
   B. Fragile X syndrome
   C. Retinoblastoma

4. Proteins are made of amino acids linked together by specific bonds called

   ☺ Peptide bonds
   B. Nitrogen bonds
   C. Hydrogen bonds
   D. Hydrogen & Nitrogen bonds

5. Cancer cells are

   A. Unlimited number of cell divisions
   B. Growth without external signals
   C. Avoidance of cell death
   ☺ All of the above

6. The enzyme which builds a <u>mRNA</u> strand complimentary to the DNA transcription unit is called:

   A. DNA polymerase
   ☺ RNA polymerase
   C. Helicase
   D. DNA ligase

7. A gene is a section of DNA that codes for a protein, this unique sequence of bases will code for the production of a unique protein is:

   Exon
   B. Intron
   C. Regulatory sequence
   D. Non-of these

8. Changes in the nucleotide sequence of DNA which aren't passed to offspring occur in

   A. Eggs & sperm cells
   Non-sexual cells
   C. Diploid and haploid cells
   D. All of the above

9. Those mutations that occur by environmental damage or mistakes during DNA replications are

   Acquired mutations
   B. Inherited mutations
   C. A and B
   D. Non-of them

10. Proto-oncogene in normal cells

    Code for proteins involved in the stimulus of cell division
    B. Suppresses progression through the cell cycle in response to DNA damage
    C. Initiates apoptosis
    D. Non-of the above

11. During cell division there are three types of check points one of them (M checkpoint) to ensure

    Chromosomes are attached to the spindle
    B. Complete DNA replication
    C. DNA not damage or broken
    D. All of the above

12. Those cancers that derived from ectoderm or endoderm of epithelial cell are called

    Carcinoma
    B. Sarcoma
    C. Leukaemia
    D. Myeloid
    E. Non-of these

13. _____ is a genetic changes that occur in more than 1 percent of the population

☺ Polymorphisms
B. Monotheism
C. Frameshift mutation

14. A heritable feature is a _____ and may have two or more variants called_____.

A. trait/characteristics
☺ character/traits
C. character/factors
D. trait/factors

15. Ahmad and Suha are planning a family, but since each has a brother who has sickle-cell anemia, they are concerned that their children may develop sickle-cell disease. Neither Ahmad, Ali nor their respective parents have the disease. They consult a genetic counsellor who tells them

A. There is very little chance that any of their children will have sickle-cell disease
B. That all of their children will have sickle-cell disease
C. That one out of four of their children could be expected to have sickle cell-disease
☺ That its possible that none of their children will have the disease but blood tests on them both will be required to make sure

16. Histone four (H4) consists of 102 amino acids and it has

A. Negative charge
☺ Positive charge
C. Neutral
D. Non-of these

17. A _____ made inside the nucleus of a cell, associates with proteins to form ribosomes.

A. mRNA
☺ rRNA
C. tRNA
D. All of the above

18. Why is sickle cell disease so called?

A. because it makes people sick
B. its named after a special type of white blood cell
☺ pH changes in the blood cells make them collapse into a sickle shape
D. because its caused by an infectious microorganism that has sickle shaped cells

19. The genetic disease Myotonic dystrophy is caused by a defective gene that

A. produces a dysfunctional protien which fails to connect the cytoskeleton of a muscle fiber
B. causes Muscular weakness

☺ All of the above

20. Which of the following is correct with regard to aneuploidy?

A. Inversion
☺ 2n + 1
C. All aneuploid individuals die before birth
D. 4n

21. Proteins that assist the binding of RNA polymerase to the promoter region on DNA strand are called

☺ Transcription factor
B. SSB protein
C. Sigma factor
D. All of the above

22. The X-ray diffraction studies conducted by _____ were key to the discovery of the structure of DNA

A. McClintock
☺ Franklin
C. Meselson and Stahl
D. Chargaff

23. Which of the following is not true of DNA?

A. A pairs with T and G pairs with C
B. Nitrogen bases are 0.34 nm apart on a DNA strand
C. The double helix is 2.0 nm wide
☺ The double helix is 3.4 nm wide

24. Which of the following is correct?

A. A forms 2 hydrogen bonds with G; T forms 3 hydrogen bonds with C
B. A forms 3 hydrogen bonds with T; G forms 2 hydrogen bonds with C
C. A forms 2 covalent bonds with T; G forms 3 covalent bonds with C
☺ A forms 2 hydrogen bonds with T; G forms 3 hydrogen bonds with C

25. Which of the following is not needed for DNA transcription?

☺ Ribosomes
B. Nucleotides
C. DNA
D. Enzymes

26. Which of the following descriptions of chromosomes is not correctly matched?

A. Metacentric — chromosome arms are almost equal in size.
B. Submetacentric — chromosome arms are slightly different in size.
☺ Acrocentric — chromosome arms are identical in size.
D. Telocentric — there is only one chromosome arm.

27. All of the cells within an individual are genetically identical.

A. True
☺ False

28. The triplet code of CAT in DNA is represented as _____ in mRNA and _____ in tRNA.

A. GAA, CAT
B. CAT, CAT
☺ GUA, CAU
D. GTA, CAU

29. _____ portions of chromosomes that stain lightly and only partially condensed

A. Heterochromatin
☺ Euchromatin
C. Facultative chromatin
D. Constitutive

30. When cancer cells gain the ability to move independently and invade other tissues, they are said to have:

A. Mobilized.
B. Evolved.
☺ Metastasized.
D. Metamorphed.

31. BRCA-1 is associated with which cancer?

A. Thyroid
B. Leukemia
C. Lung
D. Renal cells
☺ Non-of the above

32. Which of the following may contribute to causing cancer?

A. a mutation in a gene that slows the cell cycle
B. faulty DNA repair
C. loss of control over telomere length
☺ all of the above

33. If you performed a laboratory analysis of DNA, you would find that the amount of adenine is _____ the amount of thymine.

A. much greater than
B. much less than
☺ about the same as
D. shows no relationship to

34. Those mutations that arise in the absence of known mutagen are known

A. Induced mutations
B. Fused mutations
☺ Spontaneous mutations
D. None of the above

35. In addition of histone protein chromatin contains an approximately equal mass of a wide variety of

☺ Non-histone protein
B. RNA
C. Positive charge protein
D. Unknown protein

WITH BEST REGARDS TO ALL
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