LABASA SANGAM [SKM] COLLEGE

YEAR 13 BIOLOGY Covid 19 SUPPLEMENTARY WORKSHEETS

1. What is transferred from one organism to another in the process of genetic engineering?
   A. Enzymes
   B. DNA
   C. Proteins

2. What is the name of the structure found in bacterial cells into which genes can be inserted?
   A. Plasmid
   B. Protein
   C. Ribosome

3. Which sequence of events occurs in the process of making genetically modified bacteria?
   A. Extraction of required gene → Insertion of plasmid into bacterial cells → Growth of transformed bacterial cells
   B. Growth of transformed bacterial cells → Insertion of plasmid into bacterial cells → Extraction of required gene
   C. Insertion of plasmid into bacterial cells → Growth of transformed bacterial cells → Extraction of required gene

4. What does a bacterial cell that has received genetic information from another organism use its coded instructions to produce?
   A. DNA
   B. A gene
   C. A new type of protein

5. During genetic engineering what is used to cut the required gene out of the chromosome?
   A. DNA
   B. Plasmid
   C. Enzymes

6. Genes A, B, C, and D are located on the same chromosome. The recombination frequencies (RF) are as follows:

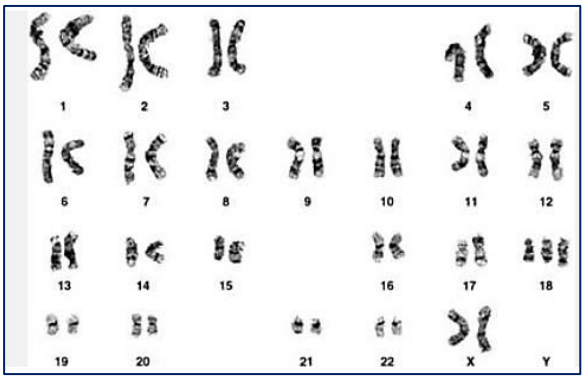
Relationship	RF
A - B	10%
A - C	25%
A - D	23%
B - C	15%
C - D	48%

What is the most likely order of the genes on the chromosome?

7. Briefly discuss the following genetic variation questions.

A. Which type of selection tends to increase genetic variation?
B. What are two main sources of genetic variation?
C. What is the relationship between meiosis and genetic variation?
D. Why is genetic variation important?
E. How do mutations lead to genetic variation?
F. How does random fertilization add to the genetic variation?
G. How does sexual reproduction lead to genetic variation?

8. What will be the physical and physiological condition of the individual whose karyotype is seen in the image?



9. Which of the following can cause polyploidy?
A. a single egg fertilized by two sperm
B. a diploid egg being fertilized by a normal sperm
C. a normal egg being fertilized by a diploid sperm
D. all of these

10. List down the pros and cons of polyploidy in plnts.

11. If you mate a diploid grape to a tetraploid grape, what is the ploidy of the offspring?
A. Monoploid
B. Diploid
C. Triploid
D. Tetraploid

12. Organic evolution is change in
A. Single individual
B. A few members of population
C. Major portion of population
D. Entire population

13. How does the fossil record support evolution?
A. It creates a timeline of evolutionary events from oldest to youngest
B. It preserves each change a species experiences as it evolves

C. It preserves each change a species experiences as it evolves
D. It layers fossils from youngest at the bottom to oldest at the top
E. It shows that island species are related to other island species

14. Which of the following is not a distinctive characteristic of primates?
A. Finger prints
B. Good night vision
C. Complex social behaviors
D. Grasping hands
E. Forward-looking eyes

15. Briefly describe the events that might have occurred during organic evolution. Also discuss about Stanley Millers experiment.

16. Describe the evidence for human evolution.

17. Describe how the **pentadactyl** limb provides evidence for evolution. Give two examples in your answer and for each explain how their limbs are adapted to their function.

18. Doctors are now prescribing fewer antibiotics to reduce the evolution of antibiotic resistant bacteria. Describe the process of evolution of antibiotic bacteria.

19. How is natural selection different from selective breeding?

20. Early humans were able to expand their dietary resources to include a greater variety, such as meat from animal carcasses:

A. Because they moved to different areas.
B. After technological breakthroughs.
C. Because they had developed the ability to think in abstract terms.
D. Because their legs were long.

21. Forager societies:

A. Are also known as “hunting and gathering” societies.
B. Had a short life span because of the uncertainty of being able to find sufficient food.
C. Generally lived in caves because they did not generally possess the skills to other shelters.
D. Are completely self-contained, never acquiring resources through trade or barter.

22. The most important physical ability in the transition from hominin to human:

A. The ability to climb trees to avoid predators.
B. bipedialism, which allowed them to function effectively in rainforest, woodlands and savanna.
C. The ability to use knuckle-walking to move through forests quickly.
D. The combination of physical strength and speed.