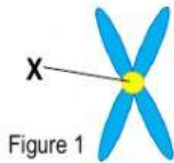


Name: _____ Student no. _____ Class: MEP 3/6

Part 1. Cell Division

Instruction: Read each questions carefully and select the correct answer.

1. Figure 1 shows a chromosome. Identify the part mark as **X**.

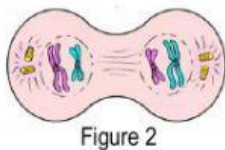


- a. Nucleus
- b. Spindle fiber
- c. Centromere
- d. Nuclear membrane

2. What is the function of the part mark as **X** from Figure 1?

- a. It links the sister chromatids.
- b. It controls the amount of materials that enters the cell.
- c. It stores food for the cell.
- d. It divides the genetic materials in a cell.

3. Figure 2 shows which phase of mitosis in a cell?

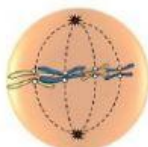


- a. Metaphase
- b. Interphase
- c. Anaphase
- d. Telophase

4. Which of the following does not happen during the phase of mitosis in Figure 2?

- a. Chromosomes arrive at the opposite poles.
- b. Chromatins tangled to form chromosomes.
- c. Spindle fibers disappear.
- d. Nucleoli reappear and nuclear membrane is formed.

5. What is the phase of mitosis shown?



- a. Prophase
- b. Cytokinesis
- c. Anaphase
- d. Metaphase

6. Which of the following happen during prophase I?

I. DNA replication

II. Nuclear membrane disappears

III. Formation of spindle fibers

IV. Homologous chromosomes pair up

a. I, II and III only

c. I, III and IV only

b. I, II and IV only

d. II, III and IV only

7. Meiosis is important in:

I. Maintaining the diploid chromosomes number from one generation to the next

II. The inheritance of parental traits

III. The formation of gametes

IV. Growth

a. I and II only

c. I, II and III only

b. III and IV only

d. II, III and IV only

8. Which of the following is a genetic bleeding disorder in which the blood does not clot normally?

a. Hemophilia

c. Turner's syndrome

b. Sickle-cell disease

d. Albinism

9. Which of the following is true about color-blindness?

a. The color-blind person is unable to see at night.

b. The affected person is unable to distinguish between red and green.

c. Color-blindness is more common among females than males.

d. Color-blindness is caused by deficiency of vitamin A.

10. Peter has difficulties in learning and has flatter face and upward slanting eyes. He has extra chromosome in his cell.

This genetic disorder known as?

- | | |
|------------------|------------------------|
| a. Down syndrome | c. Sickle-cell disease |
| b. Thalassemia | d. Albinism |

Part 2: Materials

Instruction: Read each questions carefully and select the correct answer.

11. Which of the following is not true about polymers?

- a. They are very large molecules.
- b. Some polymers are natural.
- c. Some can be re-mold into new shapes.
- d. Silk, wool and rubber are example of synthetic polymers.

12. Which are the general properties of synthetic polymers?

I. React with many chemicals

II. Good thermal insulators

III. Can be molded into many shapes

- | | |
|-------------------|-----------------------|
| a. I and II only | c. II and III only |
| b. I and III only | d. I, II and III only |

13. A polymer is any substance made up of many repeating units called _____.

- | | |
|-------------|-------------|
| a. resins | c. plastics |
| b. monomers | d. blocks |

14. Which of the following are traditional ceramics?

I. Bricks

II. Roof tiles

III. Vases

- | | |
|-------------------|--------------------|
| a. I and II only | c. II and III only |
| b. I and III only | d. I, II and III |

15. Plastics we use in our everyday life is a type of _____.

- | | |
|-------------|------------------------|
| a. wood | c. polymers |
| b. ceramics | d. composite materials |

16. Synthetic polymers are known to be **non-biodegradable**. These polymers are _____.

- | | |
|---------------------------------------|---------------------------|
| a. harmful to living things | c. resistant to corrosion |
| b. not easily broken down by bacteria | d. inflammable |

17. Why does plastic cause environmental problems?

I. It is non-biodegradable

II. When it is burned, it gives out harmful gases

III. It is being produced at a very high rate

- | | |
|-------------------|--------------------|
| a. I and II only | c. II and III only |
| b. I and III only | d. I, II and III |

18. Which are the examples of composite materials?

I. Reinforce concrete

II. Ceramics

III. Fiberglass

- | | |
|-------------------|--------------------|
| a. I and II only | c. II and III only |
| b. I and III only | d. I, II and III |

19. Which polymers occurs naturally?

- a. Neoprene and PP
- b. Nylon and Polyethene
- c. Polystyrene and PVC
- d. Wool and silk

20. Fiberglass are composite material. What are its original materials?

I. Glass

II. Plastic

III. Plant fiber

- a. I and II only
- b. I and III only
- c. II and III only
- d. I, II and III

Instruction: Identify the materials in use in daily life.

Synthetic polymers

Advance ceramics

Composite materials

Fiberglass

Natural polymers

Traditional ceramics

Reinforce concrete



Racket stings



Bone implant



Rubber

21. _____

22. _____

23. _____



Concrete



Bricks

24. _____

25. _____

26. _____



Disposable containers



Plywood

27. _____

Part 3: Chemical Change

Instruction: Read each questions carefully and select the correct answer.

28. Which of the following is not a chemical reaction?

- a. Rusting of iron
- b. Melting of ice into water
- c. Burning of wood
- d. Formation of acid rain

29. Which of the following is a chemical reaction?

- a. 
- b. 
- c. 
- d. 

30. Which of the following does not indicate a chemical reaction?

- a. change in color
- b. Change in mass
- c. Release of gas
- d. Change in size

31. Which of the following represent the state of substances in a chemical reaction correctly?

I. (l) represents the liquid state

II. (a) represents the aqueous state

III. (s) represents the solid state

IV. (g) represents the gaseous state

- a. I, II and III only
- b. I, III and IV only
- c. I, II and IV only
- d. II, III and IV only

32. Which pair of element and its chemical symbol is incorrect?

- a. Hydrogen - H
- b. Carbon - C
- c. Nitrogen - N
- d. Iron - I

33. Which pair of compound and its chemical formula is incorrect?

a. Water – H_2O

c. Magnesium oxide – MgO_2

b. Carbon dioxide – CO_2

d. Hydrochloride acid - HCl

34. Which chemical equation is not balance?

a. $\text{Mg} + \text{O} \rightarrow \text{MgO}$

c. $2\text{Al} + 3\text{CuO} \rightarrow \text{Al}_2\text{O}_3 + 3\text{Cu}$

b. $\text{Zn} + \text{HNO}_3 \rightarrow \text{Zn}(\text{NO}_3) + \text{H}_2$

d. $2\text{Fe} + 3\text{CuCl}_2 \rightarrow 2\text{FeCl}_3 + 3\text{Cu}$

35. What does the Law of conservation of Mass state?

a. All masses of chemical substances are the same.

b. The mass of the reactant is the same as the mass of the product in a chemical reaction.

c. The mass of the products is greater than the mass of the reactant as the reaction have taken place.

d. Masses of all chemical substances are not the same.

Instruction: Identify the chemical reaction.

Fermentation

Rust

Combustion

Decay

Photosynthesis



36. _____

37. _____

38. _____



39. _____

40. _____