

Intermediate Science 9
Unit 4: REPRODUCTION
STUDY GUIDE:



Know the following terms:

Nucleus	Trait	Hereditary
Gene	Chromosome	Mutation
Mutagen	Mitosis	Meiosis
Diploid	Haploid	Metamorphosis

- 1) Recognize that the nucleus of a cell contains genetic information and determines cellular processes.
- 2) Explain the role of the nucleus and its contents in determining traits and controlling cell division.
- 3) Use the terms gene and chromosome properly
- 4) Discuss factors that may lead to changes in a cell's genetic information.
- 5) Give examples of mutations caused by:
 - i. nature
 - ii. human activity
- 6) State and briefly describe the four phases of mitosis followed by cytokinesis. Include:
 - i. Prophase
 - ii. Metaphase
 - iii. Anaphase
 - iv. Telophase
- 7) Explain methods of asexual reproduction using an example. Include:
 - i. binary fission
 - ii. fragmentation
 - iii. budding
 - iv. vegetative reproduction
 - v. spore formation
- 8) State and briefly describe the eight phases of meiosis
- 9) Compare and contrast mitosis and meiosis. Include:
 - i. types of cells
 - ii. number of daughter cells produced
 - iii. amount of genetic material in each daughter cell
 - iv. their respective roles in asexual and sexual reproduction

10. Explain how various organisms reproduce sexually. Include:
 - i. moss
 - ii. flowering plant
 - iii. insect
 - a. incomplete metamorphosis
 - b. complete metamorphosis
- 11) Compare and contrast complete and incomplete metamorphosis
- 12) Compare the advantages and disadvantages of sexual and asexual reproduction. Include:
 - i. amount of energy required
 - ii. parental care
 - iii. genetic variety in offspring
- 13) Identify the major parts of the male reproductive system. Include:
 - i. testes
 - ii. scrotum
 - iii. penis
 - iv. vas deferens
 - v. urethra
14. Identify the major parts of the female reproductive system. Include:
 - i. vagina
 - ii. cervix
 - iii. uterus
 - iv. oviduct
 - v. ovary
15. Describe the major stages of human development from conception to early infancy. Include:
 - i. fertilization
 - ii. first trimester
 - iii. second trimester
 - iv. third trimester
- 16) Identify visible signs of pregnancy. Include:
 - i. cessation of menstrual flow
 - ii. widening of the hips
 - iii. enlargement of the breasts
 - iv. morning sickness
 - v. weight gain
 - vi. cravings
- 17) Identify major shifts in scientific understanding of genetics. Include:
 - i. Mendel's experiments
 - ii. Watson and Crick's double helix model of DNA
 - iii. Human Genome Project
 - iv. genetic engineering
18. Provide examples of genetic conditions that cannot be cured using scientific and technological knowledge at the present time. Include: (113-10)
 - i. Down's syndrome
 - ii. Cystic Fibrosis
 - iii. Allderdice syndrome

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