

# chapter 19

Student: \_\_\_\_\_

1. Choose the following that best characterizes the formation of uncontrolled division of cells or cancer.
  - A.mutations in DNA for the protein which activates repair enzymes
  - B.mutation in genes for inhibiting the cell cycle
  - C.mutations in proto-oncogenes/tumor suppressor genes
  - D.active telomerase
  - E.All of the choices are correct.
  
2. Normal cells typically divide 60-70 times while cancer cells:
  - A.divide an unlimited number of times
  - B.divide twice that amount
  - C.may divide 60-70 times
  - D.are unable to divide
  
3. Cancer cells have abnormal nuclei because:
  - A.the nuclear membrane is malformed
  - B.there are too many nucleoli
  - C.the chromosomes are abnormal, often showing gene amplification
  - D.of the disappearance of chromosomes, making the nucleus smaller
  
4. What is the function of telomerase?
  - A.rebuild telomere sequences
  - B.destroy telomere sequences
  - C.connect different telomere sequences
  - D.separate different telomere sequences
  
5. Choose the following that is NOT a characteristic of cancer cells.
  - A.They do not differentiate.
  - B.They invade nearby tissues if malignant.
  - C.They secrete angiogenic growth factors.
  - D.They display contact inhibition.

6. When cancer cells metastasize:
- A. tumors release growth factors
  - B. tumors spread throughout the body
  - C. tumors have nondifferentiated cells
  - D. tumors get larger and larger
7. Cancer cells are able to move about the body when:
- A. T cells attach and carry the cancer cells to different tissues
  - B. they produce proteinase which degrades the basement membrane allowing invasion of other tissues
  - C. telomeres attach to the basement membrane and pull cancer cells through to other tissues
  - D. None of the choices are correct.
8. A mutation in the *Bax* gene results in:
- A. less likelihood of apoptosis
  - B. less Bax protein present
  - C. possible tumor formation
  - D. All of the choices are correct.
9. *Ras* oncogenes
- A. produce cyclin.
  - B. activate repair enzymes.
  - C. promote apoptosis.
  - D. activate cyclin.
10. Which of the following mutated genes ultimately results in increased cyclin activity?
- A. p16
  - B. Ras
  - C. p53
  - D. both p16 and Ras
11. Stimulatory pathways are:
- A. proto-oncogenes
  - B. tumor suppressor genes

12. Inhibitory pathways are:
- A. proto-oncogenes
  - B. tumor suppressor genes
13. Cancer causing genes are
- A. apoptosis
  - B. leukemia
  - C. oncogenes
14. Programmed cell death is:
- A. apoptosis
  - B. leukemia
  - C. oncogenes
15. Cancer of blood forming cells is
- A. apoptosis
  - B. leukemia
  - C. oncogenes
16. What are telomeres?
- A. specific proteins
  - B. repair enzymes
  - C. special repetitive DNA end sequences
  - D. signalling chemicals
17. What is the role of telomeres?
- A. protect chromosome ends
  - B. act as molecular handles
  - C. repair enzymes
  - D. unfold chromosomes

18. An oncogene:
- A. is the gene that causes p53 to be readily available
  - B. is a gene that causes a cell to become differentiated
  - C. is a gene that codes for the lipid component of the plasma membrane
  - D. can make cyclin available at all times
19. The regulatory network in cells that controls cell growth includes:
- A. growth factor receptors in the plasma membrane
  - B. signaling proteins in the cytoplasm
  - C. genes in the nucleus
  - D. All of the choices are correct.
20. Which is NOT associated with the development of cancer?
- A. plasma membrane receptors
  - B. the Golgi apparatus
  - C. cytoplasmic enzymes
  - D. genes in the nucleus
21. Which is NOT associated with the development of cancer?
- A. plasma membrane receptors
  - B. the Golgi apparatus
  - C. cytoplasmic enzymes
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22. A tumor-suppressor gene:
- A. is a cancer-causing gene
  - B. is a gene that codes for inhibitory proteins that prevent cell division and promote apoptosis
  - C. is a gene that causes myeloma in muscle cells
  - D. is a gene that stops a tumor once it has developed
23. During the formation of cancer, which of the following occurs?
- A. initiation
  - B. promotion
  - C. progression
  - D. All of the choices are correct.

24. The uncontrolled division of cells is called:

- A.cancer
- B.mitosis
- C.mutation
- D.metastasis

25. An accumulation of cancer cells is called a:

- A.bolus
- B.diverticulum
- C.tumor
- D.metastasis

26. The development of cancer is called:

- A.oogenesis
- B.carcinogenesis
- C.apoptosis
- D.metastasis

27. Forming blood vessels is:

- A.metastasis
- B.apoptosis
- C.angiogenesis

28. Cell death is:

- A.metastasis
- B.apoptosis
- C.angiogenesis

29. Which type of tumor is usually encapsulated and noninvasive?

- A.benign tumor
- B.malignant tumor

30. Cancers in blood-forming cells are called:
- A.lymphomas
  - B.melanomas
  - C.carcinomas
  - D.leukemias
31. A tumor developing in lymphatic tissues is a:
- A.lymphoma
  - B.carcinoma
  - C.sarcoma
  - D.leukemia
32. A tumor arising in epithelial tissues is a:
- A.lymphoma
  - B.carcinoma
  - C.sarcoma
  - D.leukemia
33. Which of the following changes in DNA?
- A.mutagen
  - B.carcinogen
  - C.Both choices are correct.
34. Which behaviors are NOT associated with cancer development?
- A.smoking cigars and drinking alcohol
  - B.poor sleeping habits
  - C.exposure to radon
  - D.a high-fat diet
35. Which of these seems to play a role in the development of cancer?
- A.heredity
  - B.carcinogens
  - C.mutations
  - D.All of the choices are correct.

36. Which of these is considered a carcinogen or carcinogenic?
- A.radiation
  - B.toxic chemicals
  - C.viruses
  - D.All of the choices are correct.
37. Regular Pap smears are credited with preventing what percentage of cervical cancer deaths?
- A.10%
  - B.30%
  - C.65%
  - D.90%
38. Magnetic resonance imaging is particularly useful for determining the location of tumors:
- A.in the blood
  - B.of the cervix
  - C.of the brain and spinal cord
  - D.lymphatic tumors
39. Use of taxol to treat ovarian cancer is an example of what type of treatment?
- A.gene therapy
  - B.antimetastatic drugs
  - C.chemotherapy
  - D.anti-hormone therapy
40. Chemotherapy may not be an effective treatment for some cancers because:
- A.effective therapies have not been discovered
  - B.some cancer cells may be resistant
  - C.cancers caused by viruses are nonsusceptible
  - D.chemotherapy is a new therapy and not yet proven its effectiveness
41. Which of these diagnostic procedures is used for breast cancer?
- A.mammography
  - B.pap smear
  - C.sigmoscopy
  - D.stool blood test

42. Which of these diagnostic procedures is used for colon cancer?
- A.colonoscopy
  - B.CEA blood test
  - C.white cell count
  - D.both a colonoscopy and CEA blood test
43. Which of these is NOT associated with the presence of a cancer?
- A.a sore that does not heal
  - B.a lump in the breast
  - C.changes in sleeping habits
  - D.indigestion/change in bowel habits
44. The American Cancer Society recommends breast self-exams and testicular self-exams every:
- A.day
  - B.month
  - C.6 months
  - D.year
45. Which of the following has been proposed as future therapy?
- A.cancer vaccines
  - B.monoclonal antibodies
  - C.p53 gene therapy/induced tumor apoptosis
  - D.angiogenesis inhibition
  - E.All of the choices are correct.
46. Which vegetables are associated with cancer prevention?
- A.peas and string beans
  - B.potatoes and rice
  - C.cabbage and broccoli
  - D.mushrooms and peppers



## chapter 19 Key

1. Choose the following that best characterizes the formation of uncontrolled division of cells or cancer.
- a. mutations in DNA for the protein which activates repair enzymes
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  - d. active telomerase
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*Mader - 019 Chapter... #1*

2. Normal cells typically divide 60-70 times while cancer cells:
- A** divide an unlimited number of times
  - b. divide twice that amount
  - c. may divide 60-70 times
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*Mader - 019 Chapter... #2*

3. Cancer cells have abnormal nuclei because:
- a. the nuclear membrane is malformed
  - b. there are too many nucleoli
  - C** the chromosomes are abnormal, often showing gene amplification
  - d. of the disappearance of chromosomes, making the nucleus smaller

*Mader - 019 Chapter... #3*

4. What is the function of telomerase?
- A** rebuild telomere sequences
  - b. destroy telomere sequences
  - c. connect different telomere sequences
  - d. separate different telomere sequences

*Mader - 019 Chapter... #4*

5. Choose the following that is NOT a characteristic of cancer cells.
- a. They do not differentiate.
  - b. They invade nearby tissues if malignant.
  - c. They secrete angiogenic growth factors.
  - D** They display contact inhibition.

*Mader - 019 Chapter... #5*

6. When cancer cells metastasize:
- a. tumors release growth factors
  - B** tumors spread throughout the body
  - c. tumors have nondifferentiated cells
  - d. tumors get larger and larger

*Mader - 019 Chapter... #6*

7. Cancer cells are able to move about the body when:
- a. T cells attach and carry the cancer cells to different tissues
  - B** they produce proteinase which degrades the basement membrane allowing invasion of other tissues
  - c. telomeres attach to the basement membrane and pull cancer cells through to other tissues
  - d. None of the choices are correct.

*Mader - 019 Chapter... #7*

8. A mutation in the *Bax* gene results in:
- a. less likelihood of apoptosis
  - b. less Bax protein present
  - c. possible tumor formation
  - D** All of the choices are correct.

*Mader - 019 Chapter... #8*

9. *Ras* oncogenes
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  - D** activate cyclin.

*Mader - 019 Chapter... #9*

10. Which of the following mutated genes ultimately results in increased cyclin activity?
- a. p16
  - b. Ras
  - c. p53
  - D** both p16 and Ras

*Mader - 019 Chapter... #10*

11. Stimulatory pathways are:
- A** proto-oncogenes
  - b. tumor suppressor genes

*Mader - 019 Chapter... #11*

12. Inhibitory pathways are:
- a. proto-oncogenes
  - B** tumor suppressor genes

*Mader - 019 Chapter... #12*

13. Cancer causing genes are
- a. apoptosis
  - b. leukemia
  - C** oncogenes

*Mader - 019 Chapter... #14*

14. Programmed cell death is:

- A** apoptosis
- b. leukemia
- c. oncogenes

*Mader - 019 Chapter... #15*

15. Cancer of blood forming cells is

- a. apoptosis
- B** leukemia
- c. oncogenes

*Mader - 019 Chapter... #16*

16. What are telomeres?

- a. specific proteins
- b. repair enzymes
- C** special repetitive DNA end sequences
- d. signalling chemicals

*Mader - 019 Chapter... #17*

17. What is the role of telomeres?

- A** protect chromosome ends
- b. act as molecular handles
- c. repair enzymes
- d. unfold chromosomes

*Mader - 019 Chapter... #18*

18. An oncogene:

- a. is the gene that causes p53 to be readily available
- b. is a gene that causes a cell to become differentiated
- c. is a gene that codes for the lipid component of the plasma membrane
- D** can make cyclin available at all times

*Mader - 019 Chapter... #19*

19. The regulatory network in cells that controls cell growth includes:
- a. growth factor receptors in the plasma membrane
  - b. signaling proteins in the cytoplasm
  - c. genes in the nucleus
  - D** All of the choices are correct.

*Mader - 019 Chapter... #20*

20. Which is NOT associated with the development of cancer?
- a. plasma membrane receptors
  - B** the Golgi apparatus
  - c. cytoplasmic enzymes
  - d. genes in the nucleus

*Mader - 019 Chapter... #22*

21. Which is NOT associated with the development of cancer?
- a. plasma membrane receptors
  - B** the Golgi apparatus
  - c. cytoplasmic enzymes
  - d. genes in the nucleus

*Mader - 019 Chapter... #22*

22. A tumor-suppressor gene:
- a. is a cancer-causing gene
  - B** is a gene that codes for inhibitory proteins that prevent cell division and promote apoptosis
  - c. is a gene that causes myeloma in muscle cells
  - d. is a gene that stops a tumor once it has developed

*Mader - 019 Chapter... #23*

23. During the formation of cancer, which of the following occurs?
- a. initiation
  - b. promotion
  - c. progression
  - D** All of the choices are correct.

*Mader - 019 Chapter... #24*

24. The uncontrolled division of cells is called:

- A** cancer
- b. mitosis
- c. mutation
- d. metastasis

*Mader - 019 Chapter... #25*

25. An accumulation of cancer cells is called a:

- a. bolus
- b. diverticulum
- C** tumor
- d. metastasis

*Mader - 019 Chapter... #26*

26. The development of cancer is called:

- a. oogenesis
- B** carcinogenesis
- c. apoptosis
- d. metastasis

*Mader - 019 Chapter... #27*

27. Forming blood vessels is:

- a. metastasis
- b. apoptosis
- C** angiogenesis

*Mader - 019 Chapter... #28*

28. Cell death is:

- a. metastasis
- B** apoptosis
- c. angiogenesis

*Mader - 019 Chapter... #29*

29. Which type of tumor is usually encapsulated and noninvasive?

- A** benign tumor
- b. malignant tumor

*Mader - 019 Chapter... #31*

30. Cancers in blood-forming cells are called:

- a. lymphomas
- b. melanomas
- c. carcinomas
- D** leukemias

*Mader - 019 Chapter... #33*

31. A tumor developing in lymphatic tissues is a:

- A** lymphoma
- b. carcinoma
- c. sarcoma
- d. leukemia

*Mader - 019 Chapter... #34*

32. A tumor arising in epithelial tissues is a:

- a. lymphoma
- B** carcinoma
- c. sarcoma
- d. leukemia

*Mader - 019 Chapter... #35*

33. Which of the following changes in DNA?

- a. mutagen
- b. carcinogen
- C** Both choices are correct.

*Mader - 019 Chapter... #40*

34. Which behaviors are NOT associated with cancer development?
- a. smoking cigars and drinking alcohol
  - B** poor sleeping habits
  - c. exposure to radon
  - d. a high-fat diet

*Mader - 019 Chapter... #45*

35. Which of these seems to play a role in the development of cancer?
- a. heredity
  - b. carcinogens
  - c. mutations
  - D** All of the choices are correct.

*Mader - 019 Chapter... #46*

36. Which of these is considered a carcinogen or carcinogenic?
- a. radiation
  - b. toxic chemicals
  - c. viruses
  - D** All of the choices are correct.

*Mader - 019 Chapter... #47*

37. Regular Pap smears are credited with preventing what percentage of cervical cancer deaths?
- a. 10%
  - b. 30%
  - c. 65%
  - D** 90%

*Mader - 019 Chapter... #53*

38. Magnetic resonance imaging is particularly useful for determining the location of tumors:
- a. in the blood
  - b. of the cervix
  - C** of the brain and spinal cord
  - d. lymphatic tumors

*Mader - 019 Chapter... #55*



39. Use of taxol to treat ovarian cancer is an example of what type of treatment?
- a. gene therapy
  - b. antimetastatic drugs
  - C** chemotherapy
  - d. antihormone therapy

*Mader - 019 Chapter... #56*

40. Chemotherapy may not be an effective treatment for some cancers because:
- a. effective therapies have not been discovered
  - B** some cancer cells may be resistant
  - c. cancers caused by viruses are nonsusceptible
  - d. chemotherapy is a new therapy and not yet proven its effectiveness

*Mader - 019 Chapter... #58*

41. Which of these diagnostic procedures is used for breast cancer?
- A** mammography
  - b. pap smear
  - c. sigmoidoscopy
  - d. stool blood test

*Mader - 019 Chapter... #60*

42. Which of these diagnostic procedures is used for colon cancer?
- a. colonoscopy
  - b. CEA blood test
  - c. white cell count
  - D** both a colonoscopy and CEA blood test

*Mader - 019 Chapter... #61*

43. Which of these is NOT associated with the presence of a cancer?
- a. a sore that does not heal
  - b. a lump in the breast
  - C** changes in sleeping habits
  - d. indigestion/change in bowel habits

*Mader - 019 Chapter... #62*

44. The American Cancer Society recommends breast self-exams and testicular self-exams every:
- a. day
  - B** month
  - c. 6 months
  - d. year

*Mader - 019 Chapter... #63*

45. Which of the following has been proposed as future therapy?
- a. cancer vaccines
  - b. monoclonal antibodies
  - c. p53 gene therapy/induced tumor apoptosis
  - d. angiogenesis inhibition
  - E** All of the choices are correct.

*Mader - 019 Chapter... #70*

46. Which vegetables are associated with cancer prevention?
- a. peas and string beans
  - b. potatoes and rice
  - C** cabbage and broccoli
  - d. mushrooms and peppers

*Mader - 019 Chapter... #73*

# chapter 19 Summary

<i>Category</i>	<i># of Questions</i>
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