

1. The first metastasis site of colon adenocarcinoma is which of the following:

- a) Brain
- b) Liver
- c) Lung
- d) Lymph nodes
- e) Spleen

2. Which of the following neoplasms is a benign tumor?

- a) Chondroblastic osteosarcoma of the bone
- b) Granuloma of the soft tissue
- c) Tuberculoma
- d) Papillary serous cystadenoma of the ovary
- e) Papillary carcinoma of the thyroid

3. The most characteristic feature of a malignant neoplasm in contrast to a reactive or inflammatory overgrowth is which of the following:

- a) Growth factor production
- b) Necrosis
- c) Localization
- d) Autonomous growth
- e) Adjacent tissue compression

4. The most characteristic manifestation of malignant tumor is which of the following:

- a) Capsule
- b) Compression of surrounding tissue
- c) Large size
- d) Necrosis
- e) Metastases

5. The most important feature to distinguish the malignant tumor from a benign one is which of the following:

- a) Lack of encapsulation
- b) High mitotic rate
- c) Necrosis
- d) Metastases
- e) Nuclear pleomorphism

6. All of the following neoplasms are malignant, EXCEPT:

- a) Adenocarcinoma
- b) Melanoma
- c) Seminoma
- d) Chorioncarcinoma
- e) Papillary cystadenoma

7. Cytokines secreted by tumors that induce angiogenesis and assist the tumor in establishing its blood supply include all of the following factors, EXCEPT:

- a) Tumor necrosis factor
- b) Fibroblast growth factor
- c) Transforming growth factor - alpha
- d) Transforming growth factor - beta
- e) Platelet-derived growth factor

8. All of the following genes provide the negative control over cell proliferation, EXCEPT:

- a) p53
- b) DCC (Deleted in Colon Cancer)
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- d) WT-1
- e) bcl-2

9. Which of the following factors is assessed in the histological grading of a malignant tumor:

- a) Number of lymph node metastases
- b) Size (diameter) of the primary tumor
- c) Extent of invasion of the primary tumor into surrounding structures
- d) Degree of cytologic differentiation of the primary tumor
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10. All of the following statements correctly describe cell oncogenes, EXCEPT:

- a) Oncogenes are derived from viral DNA that has been incorporated into the genome
- b) Oncogenes encode proteins that resemble the products of normal genes
- c) Some oncogene products are the analogues of the growth factors
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11. Cellular proteins that are responsible for the carcinoma's ability to invade the surrounding extracellular matrix include all of the following factors, EXCEPT:

- a) CD4+ adhesion molecule
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12. The sequence of metaplasia-dysplasia-neoplasia is typically known to occur in the oncogenesis of all of the following cancers, EXCEPT:

- a) Squamous cell carcinoma of the bladder
- b) Carcinoid tumor of the small bowel
- c) Squamous cell carcinoma of the lung
- d) Adenocarcinoma of the esophagus
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13. All of the following types of molecule can directly control the cell growth, EXCEPT:

- a) Cyclins
- b) Ras proteins
- c) G proteins
- d) Mitogen-activated protein kinases
- e) Selectins

14. A tumor that tends to spread over the surfaces of organs or body cavities rather than metastasizing via blood vessels or lymphatics is which of the following:

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16. Lesion of the female genital tract considered precancerous is which of the following:

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17. Endometrial carcinoma is commonly associated with all of the following factors, EXCEPT:

- a) Diabetes mellitus
- b) Infertility
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18. The important prognostic features in invasive breast cancer are all of the following, EXCEPT:

- a) Histologic type of the tumor
- b) Grade of the tumor
- c) Size of the tumor
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22. The growth of neoplasms is critically regulated by which of the following factors:

- a) Localization
- b) Tumor stroma
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- d) Lymphatic drainage
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23. The histological nomenclature of tumors is based on which of the following features:

- a) Stromal component
- b) Localization
- c) Inflammatory changes
- d) Vascular component
- e) Parenchymal component histogenesis

24. The term of a benign mesenchymal tumor is constructed by combining the word designating the tumor cell origin plus which of the following endings or words:

- a) -sarcoma
- b) -carcinoma
- c) -oma
- d) -itis
- e) -osis (-asid)

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- a) Age
- b) Diet
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- e) Genetic makeup

30. The criteria by which benign tumors can be differentiated from the malignant ones are all of the following, EXCEPT:

- a) Maturity
- b) Rate and character of growth
- c) Localization
- d) Anaplasia
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31. Morphologic atypia is characterized by all of the following features, EXCEPT:

- a) Cell pleomorphism
- b) Metaplasia
- c) Alteration of parenchyma/stroma ratio
- d) Atypical mitoses
- e) Enlarged hyperchromatic nuclei

32. Lack of cell differentiation (anaplasia) in malignant tumors is characterized by all of the following features, EXCEPT:

- a) Cellular and nuclear pleomorphism
- b) Hyperchromatic nuclei
- c) Increased nuclear-to-cytoplasmic ratio
- d) Coarsely clumped chromatin
- e) Lack of nucleoli

33. Anaplasia is characterized by all of the following features, EXCEPT:

- a) Cellular and nuclear pleomorphism
- b) Formation of the tumor giant cells
- c) Formation of the atypical mitotic figures
- d) Formation of the Langhans' giant cells
- e) Hyperchromatic nuclei

34. Dysplasia is characterized by all of

the following features, EXCEPT:

- a) Loss of cell uniformity
- b) Hyperchromatic enlarged nuclei
- c) Appearance of mitotic figures
- d) Loss of cell architectural orientation
- e) Formation of tumor giant cells

35. Negative effects resulting from neoplasia are all of the following, EXCEPT:

- a) Compression of the adjacent tissues
- b) Cachexia
- c) Destruction of the adjacent tissues
- d) Paraneoplastic syndrome
- e) Cancer obesity

36. Microscopical features of malignant skin melanoma are all of the following, EXCEPT:

- a) Brown-black cytoplasmic granules
- b) Large nuclei with irregular contours
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37. Major classes of brain tumors are all of the following, EXCEPT:

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- b) Chondromas
- c) Neuronal tumors
- d) Poorly differentiated neoplasms
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38. Microscopical features of glioblastoma multiforme are all of the following, EXCEPT:

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- b) Vascular and endothelial cell proliferation
- c) Amyloid masses in the tumor stroma
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39. Macroscopical features of glioblastoma multiforme are all of the following, EXCEPT:

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- b) Gelatinous cut surface
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40. Microscopical features of cavernous hemangioma are all of the following, EXCEPT:

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14. First hematogenous metastases of femur soft tissue fibrosarcoma can be found in which of the following organs:

- a) Liver
- b) Brain
- c) Bones
- d) Lungs
- e) Regional lymph nodes

15. Glioblastoma multiforme metastasizes to which of the following organs:

- a) Peripheral nervous system
- b) Liver
- c) Central nervous system
- d) Kidneys
- e) Lungs

16. Cells that are believed to participate in the destruction of tumor cells include all of the following, EXCEPT:

- a) Activated macrophages
- b) Stem cells
- c) CD4+Tcells
- d) T killer cells
- e) CD4-, CD8-cells

17. The sequence of events in the tumor cell invasion into the basement membranes includes all of the following stages, EXCEPT:

- a) Loosening of intercellular junctions
- b) Attachment to the basement membrane
- c) Accumulation of neutrophils
- d) Degradation of the basement membrane
- e) Tumor cell migration

18. Tumor cell invasion into the extracellular matrix can be characterized by all of the following events, EXCEPT:

A

- a) Detachment of the tumor cells from each other
- b) Intravasation
- c) Attachment to the matrix components
- d) Degradation of the extracellular matrix
- e) Migration of tumor cells

19. The extracellular matrix components that contribute to the tumor cell invasion into the basement membranes are all of the following, EXCEPT:

E - cadherin

- a) Laminin
- b) Caspases
- c) Fibronectin
- d) Type IV collagen

20. The macroscopical features of secondary liver involvement in melanoma are all of the following EXCEPT:

- a) Enlarged liver
- b) Nutmeg liver
- c) Multiple nodular implants
- d) Black-brown implants
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31. Carcinomas forming glandular structures are called:

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32. The term of a benign epithelial tumor is constructed by combining the word designating the tumor cell origin plus which of the following endings or words:

- a) -sarcoma
- b) -carcinoma
- c) -itis
- d) -oma
- e) -osis (- asis)

33. Histological changes occurring in breast fibroadenoma include all of the following, EXCEPT:

- a) Stromal proliferation
- b) Proliferation of small ductule epithelial cells
- c) Acute inflammation
- d) Ductal compression
- e) Ductal dilation

34. Benign epithelial neoplasm producing finger-like projections from epithelial surfaces is referred to as:

- a) Papilloma
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- a) Papilloma
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- a) Maturity
- b) Rate and character of growth
- c) Local invasion
- d) Edema
- e) Metastases

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- a) Hyperplasia
- b) Hypoplasia
- c) Anaplasia
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1. Glioblastoma multiforme metastasizes to which of the following organs:

- a) Peripheral nervous system
- b) Liver
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2. Cells that are believed to participate in the destruction of tumor cells

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- c) Attachment to the matrix components
- d) Degradation of the extracellular matrix
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- a) E - cadherin
- b) Laminin
- c) Caspases
- d) Fibronectin
- e) Type IV collagen

6. The macroscopical features of secondary liver involvement in melanoma are all of the following, EXCEPT:

- a) Enlarged liver
- b) Nutmeg liver
- c) Multiple nodular implants
- d) Black-brown implants
- e) Tuberos surface

7. Microscopical features of cavernous hemangioma are all of the following, EXCEPT:

- a) Sharply defined
- b) Partly or completely filled with blood
- c) Cavernous vascular spaces, sometimes with thrombosis
- d) Micrometastases
- e) Separated by a scant connective tissue stroma

8. Benign tumor arising from smooth muscle cells is called:

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- c) Chondroma
- d) Rhabdomyoma
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- e) Regional lymph nodes

12. Morphologic atypia is characterized by all of the following features, EXCEPT:

- a) Cell pleomorphism
- b) Metaplasia
- c) Alteration of parenchyma/stroma ratio
- d) Atypical mitoses
- e) Enlarged hyperchromatic nuclei

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- a) Cellular and nuclear pleomorphism
- b) Hyperchromatic nuclei
- c) Increased nuclear-to-cytoplasmic ratio
- d) Coarsely clumped chromatin
- e) Lack of nucleoli

14. Anaplasia is characterized by all of the following features, EXCEPT:

- a) Cellular and nuclear pleomorphism
- b) Formation of the tumor giant cells
- c) Formation of the atypical mitotic figures d).
- Formation of the Langhans' giant cells
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- a) Loss of cell uniformity
- b) Hyperchromatic enlarged nuclei
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17. The growth of neoplasms is critically regulated by which of the following factors:

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19. The term of a benign mesenchymal tumor is constructed by combining the word designating the tumor cell origin plus which of the following endings or words:

- a) -sarcoma
- b) -carcinoma
- c) -oma'
- d) -itis
- e) -osis (~asis)

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29. The most common benign tumor of the female breast is which of the following:

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- b) Fibroadenoma
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30. First hematogenous metastases of endometrium carcinoma can be found in which of the following organs:

- a) Lungs
- b) Liver
- c) Bones
- d) Regional lymph nodes ,
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32. Which of the following neoplasms is a benign tumor?

- a) Chondroblastic osteosarcoma of the bone
- b) Granuloma of the soft tissue
- c) Tuberculoma
- d) Papillary serous cystadenoma of the ovary
- e) Papillary carcinoma of the thyroid

33. The most characteristic feature of malignant neoplasm in contrast to a reactive or inflammatory overgrowth is which of the following:

- a) Growth factor production
- b) Necrosis
- c) Localization
- d) Autonomous growth
- e) Adjacent tissue compression

34. The most characteristic manifestation of malignant tumor is which of the following:

- a) Capsule
- b) Compression of surrounding tissue
- c) Large size
- d) Necrosis
- e) Metastases

35. Cellular proteins that are responsible for the carcinoma's ability to invade the surrounding extracellular matrix include all of the following factors, EXCEPT:

- a) CD4+ adhesion molecule
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- c) Fibronectin receptor
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36. The sequence of metaplasia-dysplasia-neoplasia is typically known to occur in the oncogenesis of all of the following cancers, EXCEPT:

- a) Squamous cell carcinoma of the bladder
- b) Carcinoid tumor of the small bowel
- c) Squamous cell carcinoma of the lung
- d) Adenocarcinoma of the esophagus
- e) Squamous cell carcinoma of the endocervix

37. All of the following types of molecule can directly control the cell growth, EXCEPT:

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- b) Ras proteins
- c) G proteins
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- e) Selectins

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- b) Thyroid carcinoma
- c) Mesothelioma
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- b) Hypoplasia
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1. Microscopical features of glioblastoma multiforme are all of the following,

EXCEPT:

- a) Secondary necroses
- b) Vascular and endothelial cell proliferation
- c) Amyloid masses in the tumor stroma
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2. Major classes of brain tumors are all of the following, EXCEPT:

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- a) Compression of the adjacent tissues
- b) Cachexia
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17. The important factors associated with the increasing incidence of tumors are all of the following, EXCEPT:

- a) Age
- b) Diet
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18. The criteria by which benign tumors¹ can be differentiated from the malignant ones are all of the following, EXCEPT: ",

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29. The important prognostic features in invasive breast cancer are all of the following, EXCEPT:

- a) Histologic type of the tumor
- b) Grade of the tumor
- c) Size of the tumor
- d) Secondary necrosis
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- c) Enlarged nucleoli
- d) Hypochromatic nuclei
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32. Poor prognosis in breast cancer is associated with all of the following factors, EXCEPT:

- a) Overexpression of the erbB2/neu oncogene
- b) Absence of estrogen receptors
- c) Presence of aneuploidy
- d) Extensive angiogenesis
- e) Overexpression of the N-myc oncogene

33. All of the following neoplasms are malignant, EXCEPT:

- a) Adenocarcinoma
- b) Melanoma
- c) Seminoma
- d) Chorioncarcinoma
- e) Papillary cystadenoma

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- b) Fibroblast growth factor

*

- c) Transforming growth factor - alpha
- d) Transforming growth factor - beta
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40. The most characteristic feature of a malignant neoplasm in contrast to a reactive or inflammatory overgrowth is which of the following:

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- d) Endometrial polyps
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- d) Extensive angiogenesis
- e) Overexpression of the N-myc oncogene

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- c) Squamous cell carcinomas
- d) Papillomas
- e) Cystadenomas

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- e) Polyps

12. The term of a benign epithelial tumor is constructed by combining the word designating the tumor cell origin plus which of the following endings or words:

- a) -sarcoma
- b) -carcinoma
- c) -itis
- d) -oma
- e) -osis (- asis)

13. Histological changes occurring in breast fibroadenoma include all of the following, EXCEPT:

- a) Stromal proliferation
- b) Proliferation of small ductule epithelial cells
- c) Acute inflammation
- d) Ductal compression
- e) Ductal dilation

14. Benign epithelial neoplasm producing finger-like projections from epithelial surfaces is referred to as:

- a) Papilloma
- b) Adenoma
- c) Fibroma
- d) Sarcoma
- e) Teratoma

15. The most common benign tumor of the ovary is which of the following:

- a) Papilloma
- b) Fibroma
- c) Cystadenoma
- d) Adenocarcinoma
- e) Melanoma

Adenocarcinoma ii! e)
Melanoma

16. Criteria by which benign tumors can be differentiated from malignant ones are all of the following, EXCEPT:

- a) Maturity
- b) Rate and character of growth
- c) Local invasion
- d) Edema
- e) Metastases

17. Lack of differentiation is characteristic of which of the following processes:

- a) Hyperplasia
- b) Hypoplasia
- c) Anaplasia
- d) Hypertrophy
- e) Dysplasia

18. All of the following morphologic features characterize the adenocarcinoma cells, EXCEPT:

- a) Variation in size and shape
- b) Hyperchromatic nuclei
- c) Enlarged nucleoli
- d) Hypochromatic nuclei
- e) Atypical mitoses

19. The most common benign tumor of the female breast is which of the following:

- a) Cystadenoma
- b) Fibroadenoma
- c) Sarcoma
- d) Fibroma
- e) Adenocarcinoma

20. First hematogenous metastases of endometrium carcinoma can be found in which of the following organs:

- a) Lungs
- b) Liver
- c) Bones
- d) Regional lymph nodes
- e) Central nervous system

21. Anaplasia is characterized by all of the following features, EXCEPT:

- a) Cellular and nuclear pleomorphism
- b) Formation of the tumor giant cells
- c) Formation of the atypical mitotic figures
- d) Formation of the Langhans' giant cells
- e) Hyperchromatic nuclei

22. Dysplasia is characterized by all of the following features, EXCEPT:

- a) Loss of cell uniformity
- b) Hyperchromatic enlarged nuclei
- c) Appearance of mitotic figures
- d) Loss of cell architectural orientation
- e) Formation of tumor giant cells

23. Negative effects resulting from neoplasia are all of the following, EXCEPT:

- a) Compression of the adjacent tissues
- b) Cachexia
- c) Destruction of the adjacent tissues
- d) Paraneoplastic syndrome
- e) Cancer obesity

24. Microscopical features of glioblastoma multiforme are all of the following, EXCEPT:

- a) Secondary necroses
- b) Vascular and endothelial cell proliferation
- c) Amyloid masses in the tumor stroma
- d) Cellular and nuclear pleomorphism
- e) Absence of the tumor border line

25. Macroscopical features of glioblastoma multiforme are all of the following, EXCEPT:

- a) Cystic degeneration and hemorrhage
- b) Gelatinous cut surface
- c) Soft and red or firm and brown areas
- d) Irregular demarcation zone
- e) Firm and white or soft and yellow areas

26. Microscopical features of cavernous hemangioma are all of the following, EXCEPT:

- a) Sharply defined
- b) Partly or completely filled with blood
- c) Cavernous vascular spaces, sometimes with ¹ thrombosis
- d) Micrometastases
- e) Separated by a scant connective tissue stroma

27. The extracellular matrix components that contribute to the tumor cell invasion into the basement membranes are all of the following, EXCEPT:

- a) E - cadherin
- b) Laminin
- c) Caspases
- d) Fibronectin
- e) Type IV collagen

28. Benign tumor arising from smooth muscle cells is called:

- a) Leiomyoma
- b) Myoma
- c) Chondroma
- d) Rhabdomyoma
- e) Fibroma

29. The macroscopical features of secondary liver involvement in melanoma are all of the following, EXCEPT:

- a) Enlarged liver
- b) Nutmeg liver
- c) Multiple nodular implants
- d) Black-brown implants
- e) Tuberos surface

30. Microscopical features of malignant skin melanoma are all of the following, EXCEPT:

- a) Brown-black cytoplasmic granules
- b) Large nuclei with irregular contours
- c) Clumped chromatin under nucleolar membrane
- d) Glandular formation
- e) Tumor nest formation

31. Major classes of brain tumors are all of the following, EXCEPT:

- a) Gliomas
- b) Chondromas
- c) Neuronal tumors
- d) Poorly differentiated neoplasms
- e) Meningiomas

32. Benign tumors composed of either cavernous spaces or serpentine capillary like channels containing blood or lymph are all of the following, EXCEPT:

- a) Capillary lymphangiomas
- b) Cavernous hemangiomas
- c) Capillary telangiectases
- d) Cavernous lymphangiomas
- e) Capillary hemangiomas

33. Leiomyomas of the uterus are characterized by all of the following features, EXCEPT:

- a) Arise from uterine muscle
- b) May undergo degenerative changes
- c) Are hormone-dependent tumors
- d) Usually are multiple tumors
- e) Always undergo malignization

34. First hematogenous metastases of femur soft tissue fibrosarcoma can be found in which of the following organs:

- a) Liver
- b) Brain
- c) Bones
- d) Lungs
- e) Regional lymph nodes

35. Glioblastoma multiforme metastasizes to which of the following organs:

- a) Peripheral nervous system
- b) Liver
- c) Central nervous system
- i d) Kidneys
- e) Lungs

36. Cells that are believed to participate in the destruction of tumor cells include all of the following, EXCEPT:

- a) Activated macrophages
- b) Stem cells
- c) CD4+Tcells
- d) T killer cells
- e) CD4-, CD8-cells

37. The sequence of events in the tumor cell invasion into the basement membranes includes all of the following stages, EXCEPT:

- a) Loosening of intercellular junctions
- b) Attachment to the basement membrane
- c) Accumulation of neutrophils
- d) Degradation of the basement membrane
- e) Tumor cell migration

38. Tumor cell invasion into the extracellular matrix can be characterized by all of the following events, EXCEPT:

- a) Detachment of the tumor cells from each other
- b) Intravasation
- c) Attachment to the matrix components
- d) Degradation of the extracellular matrix
- e) Migration of tumor cells

39. Morphologic atypia is characterized by all of the following features, EXCEPT:

- a) Cell pleomorphism
- b) N4etaplasia
- c) Alteration of parenchyma/stroma ratio
- d) Atypical mitoses
- e) Enlarged hyperchromatic nuclei

40. Lack of cell differentiation (anaplasia) in malignant tumors is characterized by all of the following features, EXCEPT:

- a) Cellular and nuclear pleomorphism
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- d) Coarsely clumped chromatin
- e) Lack of nucleoli

1. The criteria by which benign tumors can be differentiated from the malignant ones are all of the following, EXCEPT:

- a) Maturity
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- d) Anaplasia
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12. Benign tumor arising from smooth muscle cells is called:

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- b) Myoma
- c) Chondroma
- d) Rhabdomyoma
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13. The term of a benign mesenchymal tumor is constructed by combining the word designating the tumor cell origin plus which of the following endings or words:

- a) -sarcoma
- b) -carcinoma
- c) -oma
- d) -itis
- e) -osis (-asis) -

14. Benign tumor arising from fibroblastic cells is called:

- a) Chondroma
- b) Adenoma
- c) Osteoma
- d) Fibroma-e)
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17. Malignant tumors arising from mesenchymal tissue are referred to as:

- a) Sarcomas-
- b) Adenocarcinomas
- c) Papillomas
- d) Cystadenomas
- e) Polyps

18. The important factors associated with the increasing incidence of tumors are all of the following, EXCEPT:

- a) Age

- b) Diet
- c) Environment
- d) Acute inflammation -
- e) Genetic makeup

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22. The most characteristic manifestation of malignant tumor is which of the following:

- a) Capsule
- b) Compression of surrounding tissue
- c) Large size
- d) Necrosis
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- b) High mitotic rate
- c) Necrosis
- d) Metastases
- e) Nuclear pleomorphism

U 24. All of the following neoplasms are J; malignant, EXCEPT: r

- a) Adenocarcinoma¹
- b) Melanoma
- c) Seminoma
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- e) Papillary cystadenoma

25. Cytokines secreted by tumors that induce angiogenesis and assist the tumor in establishing its blood supply include all of the following factors, EXCEPT:

- a) Tumor necrosis factor
- b) Fibroblast growth factor
- L j c) Transforming growth factor – alpha
- d) Transforming growth factor - beta
- e) Platelet-derived growth factor

26. All of the following genes provide the negative control over cell proliferation, EXCEPT:

- a) p53
- b) DCC (Deleted in Colon Cancer)
- c) Rb
- d) WT-1
- .e) bcl-2

27. Which of the following factors is assessed in the histological grading of a malignant tumor:

- a) Number of lymph node metastases
- b) Size (diameter) of the primary tumor
- c) Extent of invasion of the primary tumor into surrounding structures
- d) Degree of cytologic differentiation of the primary tumor
- e) Liver metastases

28. All of the following statements correctly describe cell oncogenes, EXCEPT:

- a) Oncogenes are derived from viral DNA that has been incorporated into the genome
- b Oncogenes encode proteins that resemble, the products of normal genes
- c) Some oncogene products are the analogues of the growth factors
- d) Some oncogene products are the analogues of the growth factor receptors e) Some oncogene products activate nuclear transcription

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