171. Correct statements about nitric oxide include all of the following EXCEPT: a. Inhibition of DNA synthesis *This is a true statement.*
b. *Is a potent vasodilator* *This is a true statement.*
c. Acts as a neurotransmitter *This is a true statement.*
d. Produced by macrophages *This is a true statement.*
e. Reacts with citrulline to produce arginine
   *This is an incorrect statement. L-arginine in the presence of an appropriate amount of nitric oxide synthetase (NOS) and NADPH as a source of electrons will produce citrulline and nitric oxide.* Correct answer is: e
Section on Macrophages. Reference: page 170

175. Which of the following immunoglobulins plays a dominant role in hypersensitivity reactions:
   a. IgM
   N/A
   b. IgG
   N/A
   c. IgE
   IgE figures predominantly in the immediate hypersensitivity reaction by binding to and activating specialized eosinophils (the mast cell).
   d. IgA
   N/A
   e. IgO
   N/A
Correct answer is: c
Section on Immunoglobulins Reference: page 173
177. The main function of immunoglobulins is:

a. Provide opsonization and to activate complement cascade

Immunoglobulins bind to the antigen of the microbial invader and facilitate opsonization by macrophages. It also serves to activate the complement cascade through the classic pathway of activation.

b. Stimulate kinin release by beta lymphocytes N/A

c. Activate Th lymphocytes N/A

d. Inhibit ribonucleotide reductase

This how nitric oxide has an effect on a microbial invader. It is not related to immunoglobulins. e. Stimulate capillary vasodilatation

Nitric oxide produces capillary vasodilatation not immunoglobulins.

Correct answer is: a ~ Section on Immunoglobulins.

Reference: page 173

180. All of the following are associated with activation of the complement cascade EXCEPT: a. Vasodilatation

This is a true statement. b. Activation of proteases This is a true statement.

c. Development of membrane-attack complexes (MAC) This is a true statement.

d. Stimulation of chemotaxis This is a true statement.

e. Suppression of bradykinin release

This statement is incorrect. There is actually stimulation of bradykinin release which is stimulated by both enzyme and substrate release. Correct answer is: e

Section on Complement. Reference: page 174
182. Which of the following immunosuppressive drugs has its effect by inhibiting IL-2 production? 

a. Azathioprine
This drug inhibits DNA synthesis and lymphocyte proliferation.
b. Glucocorticoids
Glucocorticoids inhibit DNA and RNA production, migration of lymphocytes, and decreases PMN and macrophage chemotaxis and function.
c. Cyclosporin (CSA)
Cyclosporin suppresses the immune response by inhibiting IL-2 production by helper T (Th) lymphocytes and it has become the most commonly used immune suppressor drug.
d. Monomurab (OKT3)
Monomurab (OKT3) binds to the surface of T cells inhibiting proliferation and function.
e. Mycophenolate mofetil
Mycophenolate mofetil inhibits DNA synthesis and lymphocyte proliferation. Correct answer is: c

Section on Immunophysiology of Organ and Tissue Transplantation. Reference: page 178

384. The tumor associated antigen alpha fetoprotein (AFP) is most likely to be present on which one of the following:

a. islet cell tumor of the pancreas
Alpha fetoprotein is not associated with islet cell tumors of the pancreas.
b. small cell carcinoma of the lung
Alpha fetoprotein is not associated with oat cell carcinoma of the lung.
c. melanoma
Alpha fetoprotein is not associated with melanoma.
d. adrenal carcinoma
Alpha fetoprotein is not associated with adrenal carcinoma.
e. non-seminomatous testicular carcinoma
Alpha fetoprotein is found in the developing fetus in the liver and yolk sac cells and is not found in normal adults. Certain patients with hepatocellular carcinoma and germinal tumors such as non-seminomatous testicular carcinomas will produce AFP.

Correct answer is: e

Section on Tumor Immunology -Cellular Aspects. Reference: page 162-163
386. Which of the following tumors is the most likely to undergo an immunologically mediated spontaneous regression:

a. basal cell carcinoma
   Basal cell carcinoma rarely undergoes spontaneous regression.

b. neuroblastoma
   Neuroblastoma in children is associated with an unusually high incidence of spontaneous regression. Spontaneous regressions are also reported with malignant melanoma, renal cell carcinoma and choriocarcinoma. Reference: Section on Tumor Immunology -Cellular Aspects.

c. testicular carcinoma
   Testicular carcinoma rarely undergoes spontaneous regression.

d. ovarian carcinoma
   Ovarian carcinoma rarely undergoes spontaneous regression.

e. squamous cell lung carcinoma
   Squamous cell lung carcinoma rarely undergoes spontaneous regression.

Correct answer is: b

Section on Tumor Immunology -Cellular Aspects. Reference: page 169

1230. All of the following is true of virus-induced tumors EXCEPT:

a. Each tumor virus produces tumors which share common antigens
   This is a true statement. Each tumor virus produces tumors which share one or more common antigens. Please choose another answer.

b. Viruses which induce tumors incorporate their nucleic acids into the cell DNA
   This is a true statement. In the vast majority of virally-induced tumors, all or part of the viral genome or complimentary copies can be isolated from the tumor cell DNA. Please choose another answer.

c. Epstein-Barr virus is associated with hepatocellular carcinoma
   Hepatitis B is associated with hepatocellular carcinoma. EBV is associated with nasopharyngeal carcinoma.

d. RNA tumor virus are known to produce leukemias and lymphomas in some species.
   This is a true statement. RNA tumor viruses are known to produce leukemias and lymphomas in several species. Please choose another answer.

e. RNA tumor virus induced tumors tend to continually shed virus and viral proteins.
   RNA tumor virus induced tumors tend to continually shed virus. Please choose another answer.

Correct answer is: c

Oncology: Section on Tumor Immunology Reference: page 199
1231. All of the following are true about interferon EXCEPT: a. Is used to treat hairy cell leukemia
This is a true statement. Interferon alpha is approved for treatment of hairy cell leukemia. Please choose another answer. b. blocks viral replication
This is a true statement. The interferons block intracellular viral replication. Please choose another answer. c. has no activity against melanoma
This is not a true statement. Interferon alpha 28 is the only agent approved for adjuvant therapy of melanoma. d. shows anti-tumor activity in some malignancies
This is a true statement. Interferon has anti-tumor activity against hairy cell leukemia and melanoma. Please choose another answer. e. produced by leukocytes
This is a true statement. Interferons are produced by leukocytes, fibroblasts and macrophages. Please choose another answer. Correct answer is: c

Oncology: Section on Immunotherapy Reference: page 203

1234. A 40 year old woman with a family history is found to have a BRCA 1 high risk mutation when her sister's breast cancer is evaluated. She has no evidence of lesions in her breasts and ovaries. Reasonable options for management do NOT include. a. Close observation and screening
This is acceptable if and only if the patient realizes she is at very high risk over her lifetime. Please choose another answer. b. Bilateral mastectomy
This is reasonable and decreases the risk of breast cancer nearly 99%. These patients are excellent candidates for breast reconstruction. c. Bilateral oophorectomy
This is a reasonable approach and substantially decreases lifetime risk of cancer. This can be performed via a laparoscopic approach. d. Bilateral needle breast biopsy
Such biopsies are very unlikely to reveal meaningful information. Further, the value of the genetic analysis is to find at risk patients before histologic changes are found. Women undergoing bilateral prophylactic mastectomies in this setting have histologic lesions found anywhere in either breast in <10% of cases. e. Close observation, screening and tamoxifen
This is reasonable if the patient realizes the limited proven value of chemoprevention. Correct answer is: d

Breast Cancer; Genes Associated with Breast Cancer and page 338 in Breast Chapter Reference: page 198