

1. Which of the following hold antigen-antibody complexes together?
  - I. electrostatic forces
  - II. covalent bonds
  - III. van der Waals forces
  - IV. hydrophobic interactions
  - A. I, II, III
  - B. II, III, IV
  - C. I, III, IV
  - D. I, II, IV
  - E. all of the above
  
2. Which one of the following statements regarding IgD is *false*?
  - A. does not cross the placenta
  - B. binds complement
  - C. about 1% of all serum immunoglobulins
  - D. does not bind to cells through its Fc region
  
3. Which one of the following disease-HLA associations is incorrect?
  - A. Type I diabetes mellitus – DR3, DR4
  - B. Ankylosing spondylitis – B27
  - C. Rheumatoid arthritis – DR4
  - D. Goodpasture's disease – B35
  - E. Sjogren syndrome – DR3
  
4. The HLA gene is present at which chromosomal location?
  - A. 6p
  - B. 6q
  - C. 3p
  - D. 3q
  - E. 22q
  
5. Which one of the following is not a characteristic component of DiGeorge's syndrome?
  - A. hypocalcemia
  - B. deletions on chromosome 11q22
  - C. cleft palate
  - D. thymic aplasia
  - E. cardiac abnormalities
  
6. Which one of the listed factors from the complement system is deficient in hereditary angioedema?
  - A. C1
  - B. C1 inhibitor
  - C. C3 convertase
  - D. properdin
  - E. C4

7. Which disease-hypersensitivity type association is incorrect?
- A. transplant rejection – cell-mediated (type IV)
  - B. systemic lupus erythematosus -- immune complex-mediated (type III)
  - C. Goodpasture syndrome -- antibody-mediated (type II)
  - D. serum sickness – antibody-mediated (type II)
  - E. bee sting allergy – immediate (type I)
8. Which of the following conditions are associated with hyperviscosity?
- I. Waldenstrom's macroglobulinemia
  - II. Polycythemia vera
  - III. Rheumatoid arthritis
  - IV. Sickle cell anemia
- A. I, II, IV
  - B. I, II, III
  - C. I only
  - D. I and II only
  - E. All of the above
9. Which one of the following statements regarding CSF electrophoresis in a patient with suspected multiple sclerosis (MS) is correct?
- A. a serum specimen must be run concurrently for comparison
  - B. oligoclonal bands are pathognomonic for MS
  - C. typically performed by SDS-PAGE
  - D. silver staining is more rapid, but less sensitive than Coomassie Blue
  - E. oligoclonal bands are found in the beta-2 region
10. Which one of the following statements regarding complement C3 is incorrect?
- A. enzymatic cleavage yields an anaphylatoxin and an opsonin
  - B. predominantly produced by the hepatocyte
  - C. elevated levels in patients with idiopathic focal glomerulosclerosis indicates a favorable prognosis
  - D. deficiencies are associated with increased risk of meningococcal infection
  - E. part of the membrane attack complex (MAC)
11. (Please refer to image 1) Which one of the following statements is correct?
- A. Area III represents the constant domain
  - B. Area II represents the carboxy terminus
  - C. Area III has bivalent binding capacity
  - D. Area IV is a crystallizable fragment
  - E. Area V is the site of pepsin cleavage

# PathMD™: Board Review Letter

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Immunology – Part 1

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12. . A 20-year-old male presented with lethargy, fever, sore throat, and cervical lymphadenopathy. Physical examination revealed splenomegaly. Laboratory evaluation revealed lymphocytosis with large, atypical lymphocytes. Which of the following statements is correct?
- A. anti-CMV IgG present in the patient's serum confirms acute CMV infection
  - B. An anti-streptolysin O (ASO) test is indicated to rule out a group B streptococcal pharyngitis
  - C. IgM (titer > 1:32) to EBV viral core antigen (VCA) is consistent with acute EBV infection
  - D. Heterophile antibodies are composed of a mixture of IgG and IgM antibodies specific for EBV early antigen (EA).
  - E. Lymph node biopsy is likely to reveal large, atypical, CD15 and CD30 positive lymphocytes
13. Which one of the following statements best describes rheumatoid factor?
- A. Test methodology is typically nephelometry or latex immunofixation.
  - B. It is an antibody against the Fab portion of IgG.
  - C. It is an antibody against cellular DNA.
  - D. IgA rheumatoid factor is associated with less severe disease.
  - E. The test is suitable for use as a screening test for rheumatoid arthritis among elderly patients due to its high positive predictive value.
14. (Please refer to image 2) Which one of the following statements regarding the serum protein electrophoresis pattern is correct?
- A. Peak I is the closest peak to the cathode
  - B. Haptoglobin is normally a component of peak II
  - C. This pattern is consistent with nephrotic syndrome
  - D. Peak V is consistent with a polyclonal gammopathy
  - E. None of the above are correct