MIDTERM EXAMINATION

Select the best answer for the multiple choice questions. There are 52 questions and 9 pages on the examination. Each question will count one point. Notify the instructor if your examination does not have 9 pages. Clearly indicate on the scan form the one best answer to each question among the answers provided. Be sure that you have selected your choice correctly on the scan form. Be sure that you have entered your name and identification number on the scan form and filled out the columns for the letters of your name and numbers of your identification number correctly (see front and back). Use a #2 pencil, and fill all circles completely.

1. The highest number of male AIDS cases in Los Angeles are Latino, but the prevalence of AIDS is lower among Latino males than among either white or African-American males.  
   A. True  
   B. False

2. Barriers to HIV/AIDS diagnosis and care among Latinos include:  
   A. A high proportion are undocumented (not in U.S. legally)  
   B. Are not fluent in idiomatic English and have a lower literacy rate  
   C. Are reluctant to discuss sex  
   D. All of the above  
   E. A. and B. above

3. HIV/AIDS messages targeted to Latinos must:  
   A. Recognize differences in Spanish language usages by different nationalities  
   B. Use standard Spanish  
   C. Must recognize different levels of acculturation to the U.S.  
   D. Must overcome cultural reluctance to discuss sex  
   E. A. C. and D. above

4. In the U.S. the only group in which AIDS rates are higher than among Latino males are:  
   A. Whites  
   B. Asians  
   C. African Americans  
   D. Asians  
   E. Pacific Islanders

5. Latino women are most likely to become infected with HIV by:  
   A. Sharing drug injecting apparatus  
   B. Engaging in commercial sex work  
   C. Being a health worker  
   D. Their husbands  
   E. Getting tattoos
6. African-American women are more than twice as likely to be HIV-infected as white or Latino women.
   A. True
   B. False

7. The greatest risk of HIV infection for an African-American women is from:
   A. Her husband
   B. Injection drug use
   C. Commercial sex work
   D. Having a sex partner who is an injection drug user
   E. B. and D. above

8. Many African-American males become infected in prison through:
   A. Male-to male-sex
   B. Non-injection drug use in prison
   C. Unsanitary living conditions
   D. All of the above
   E. A. and C. above

9. Match the correct labels for the pyramid (at right) of an early stage in an HIV epidemic.
   A. a=AIDS, b= unknown HIV-infected, c= known HIV-infected
   B. a= unknown HIV-infected, b= AIDS, c= known HIV-infected
   C. a= known HIV-infected, b= AIDS, c= unknown HIV-infected
   D. a= AIDS, b= known HIV-infected, c= unknown HIV-infected

10. The most effective intervention for reducing HIV among African-Americans is:
    A. Prison education programs
    B. Television messages
    C. Radio messages
    D. Posters
    E. Community mobilization

11. A major barrier to HIV prevention in the African-American community is the previous experience with public health officials as exemplified by the Tuskegee syphilis study.
    A. True
    B. False

12. Although only 10-15% of AIDS patients present with neurologic symptoms, pathologic changes in the nervous system are found in what percent of AIDS patients at autopsy?
    A. 10%
    B. 25%
    C. 40-50%
    D. 70-90%
    E. 100%
13. Diagnosable dementia from HIV infection doesn’t usually begin until:
   A. Within one year of infection
   B. At five years after infection
   C. Five years before the diagnosis of AIDS
   D. One year before the diagnosis of AIDS
   E. One year after the diagnosis of AIDS

14. HIV causes neurologic deficit by directly infecting the neurons.
   A. True
   B. False

15. Dementia is difficult to diagnosis in patients with:
   A. Kaposi’s sarcoma
   B. Tuberculosis
   C. Depression
   D. Schizophrenia
   E. Candida infection

16. Which of the following are NOT usually affected by HIV infection?
   A. Attention and concentration
   B. Gross and fine motor function
   C. Verbal and non-verbal memory
   D. Higher order reasoning
   E. Language skills

17. Which of the following is/are associated with decreased chance of dementia?
   A. Decreased viral load
   B. Decreased CD8 level
   C. Decreased CD4/CD8 ratio
   D. HAART treatment
   E. A. and D. above

18. HIV infection in the central nervous system results in dementia in 100% of patients.
   A. True
   B. False

19. HIV affects primarily the:
   A. Gray matter of the brain
   B. White matter of the brain
   C. Brain stem
   D. Spinal cord
   E. Peripheral neurons
20. Opportunistic infections of the central nervous system include:
   A. Viruses
   B. Fungi
   C. Bacteria
   D. Parasites
   E. All of the above

21. Antibodies are an example of:
   A. Adaptive immunity
   B. Innate immunity
   C. Non-specific protein-generating immunity
   D. Conversion of proteins into globulins
   E. All of the above

22. Adaptive immunity involves which two major types of cells?
   A. Lymphocytes and an B cells
   B. Lymphocytes and CD8 cells
   C. CD8 and CD4 cells
   D. Lymphocytes and CD4 cells
   E. Lymphocytes and antigen presenting cells (APC)

23. Which type of lymphocyte has a cytotoxic function?
   A. Dendritic cells
   B. Antigen-presenting cells
   C. CD8 cells
   D. CD4 cells
   E. B cells

24. Dendritic cells:
   A. Present antigen with class II MHC molecules
   B. Provide co-stimulatory signals necessary for activation of T cells
   C. Stimulate the production of antibodies
   D. Stimulate the production of natural killer cells
   E. A. and B. above

25. CCR5 and CRCX4 are examples of what kind of receptors?
   A. B cell receptors
   B. Antibody receptors
   C. Cytokine receptors
   D. Macrophage receptors
   E. Universal cell receptors
26. Immune tolerance is:
   A. The inability to react to self proteins
   B. The ability to adapt to foreign proteins
   C. The ability to immunologically ignore foreign proteins
   D. The ability to tolerate globulins
   E. All of the above

27. The major immune response to foreign antigens occurs in:
   A. The peripheral blood
   B. The thymus
   C. The lymph nodes
   D. The spleen
   E. C. and D. above

28. The highest levels of HIV occur:
   A. During the period between the development of AIDS and death
   B. During the acute phase and after the development of AIDS
   C. Between the acute phase and the development of AIDS
   D. 6-12 months after infection
   E. 6-12 months prior to the diagnosis of AIDS

29. Why does the immune response fail to clear HIV?
   A. HIV infects cells of the immune system
   B. HIV integrates into the host genome
   C. Host factors can paradoxically enhance HIV replication
   D. Sugar coating (glycosylation) of gp120 protects against antibody recognition
   E. All of the above

30. With HAART treatment the key to success is:
   A. Compliance with the drug regimen
   B. The selection of a specific protease inhibitor
   C. The selection of a specific nucleoside reverse transcriptase inhibitor
   D. The selection of a specific non-nucleoside reverse transcriptase inhibitor
   E. Inclusion of zidovudine in the HAART regimen

31. Predictors of drug adherence do NOT include:
   A. Age
   B. Gender
   C. History of drug abuse
   D. Disease stage
   E. Initial viral load at 6 months after infection
32. The major goal of treatment is:
   A. Reduction of CD4 levels
   B. Reduction of CD8 levels
   C. Increase in CD4 levels
   D. Reduction in viral load
   E. Increase in CD8 levels

33. When should HAART treatment be initiated:
   A. As soon as HIV infection is discovered
   B. At the onset of AIDS
   C. When the patient has less than 200 CD4 cells
   D. When the patient has symptoms and less than 350 CD4 cells
   E. C. and D. above

34. The medical community now agrees that scheduled interruptions of HAART are the optimal treatment approach.
   A. True
   B. False

35. The major goal of treatment currently is to:
   A. Produce more potent reverse transcriptase inhibitors
   B. Produce more potent protease inhibitors
   C. Simplify the HAART regimen
   D. Produce enteric coated pills
   E. Produce a combination RTI/PI pill

36. The main treatment issue in developing countries in which measurements of viral load and CD4 levels are not available is:
   A. Finding a substitute for CD4 levels
   B. Finding a substitute for viral load measurements
   C. Deciding which drugs to use
   D. Deciding when to initiate treatment
   E. Deciding whether to use scheduled interruptions of treatment

37. The major mode of spread of HIV world-wide is:
   A. Plasma and blood donation
   B. Injection drug use
   C. Male-to-male sex
   D. Contaminated blood supplies
   E. Heterosexual intercourse

38. As of December 31, 2001 the cumulative number of HIV/AIDS patients was:
   A. 12 million
   B. 27 million
   C. 62 million
   D. 90 million
   E. 150 million
39. In 2001 what proportion of new HIV infections occurred in developing countries?
   A. 10%
   B. 25%
   C. 55%
   D. 75%
   E. 95%

40. Of the HIV-infected persons 15-49 years what proportion occur in young persons 15-24 years of age?
   A. 10%
   B. 25%
   C. 50%
   D. 75%
   E. 95%

41. The highest incidence of AIDS in both the United States and Los Angeles is among:
   A. Latino males
   B. Latino females
   C. African-American males
   D. African-American females
   E. Samoan males

42. The greatest percent decline in AIDS incidence in the U.S. has occurred among:
   A. Whites
   B. African-Americans
   C. Latinos
   D. Asian-Americans
   E. Samoans

43. The greatest percent increase in HIV prevalence from 1994-97 occurred in which area(s)?
   A. Africa
   B. India, China and Russia
   C. Latin America
   D. The Caribbean nations
   E. South Africa

44. The reporting fraction for HIV is lowest in which area?
   A. Asia
   B. South America
   C. Europe
   D. Oceania
   E. Africa

45. Which of the following factors does NOT promote spread of HIV?
   A. Length of the dry season
   B. Proportion of population 15-45 years of age
C. Male to female ratio  
D. Rapid urbanization  
E. Use of trucks for transport of goods

46. Surveillance is useful to:  
A. Establish the extent of an epidemic  
B. Monitor the course of an epidemic  
C. Evaluate the success of intervention programs  
D. Establish program priorities  
E. All of the above

47. The focus of surveillance is the individual whereas the focus of screening is the population.  
A. True  
B. False

48. The value of sentinel surveillance is:  
A. To provide an early warning of disease spread  
B. To establish the size and scope of the epidemic  
C. To identify the reservoirs of infection  
D. All of the above  
E. A. and C. above

49. Which viral genes are essential for the completion of the replication cycle and survival of HIV?  
A. TAT  
B. REV  
C. VPR  
D. TAT and REV  
E. TAT and VPR

50. CXCR4 receptors are not present on macrophages.  
A. True  
B. False

51. Which type of HIV is responsible for the majority of HIV transmission?  
A. CCR5 tropic  
B. CRCX4 tropic  
C. Both are equally responsible  
D. Neither is responsible  
E. B cell tropic

52. The viral load is increased when:  
A. There is inactivation of target cells  
B. The virus mutates to CXCR4 tropic  
C. The virus mutates to B cell tropic  
D. The CD8 cells increase
E. The antibody levels increase significantly