Question banks of Medical Virology

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VIROLOGY MIDTERM 1 STUDY QUESTIONS:

- What are the different modes of viral transmission?
- What is the history behind discovering viruses? Name of the first virus discovered and of the discoverer?
- What was the purpose of Hershey-Chase experiment?
- Define clade? Define viromes?
- Explain Influenza Pandemic
- Explain AIDS epidemic
- Explain recent viral outbreaks (Measles) and Andrew Wakefield publication
- Explain Ebola virus outbreak in West Africa (2014)
- Explain Zika virus outbreak (2016)
- Define zoonosis?
- Why are virus particles formed? Explain self-assembly
- What are the different structures of viruses. Give examples.
- What is Baltimore classification of viruses?
- Define syndromes
- What is the name of the first animal virus?
- What are the key steps of the viral replication cycle?
- HBV and infectious Dane particle?
- Why RNA viruses have more mutations?
- Define zoonosis?
- Why are virus particles formed? Explain self-assembly
- What are the different structures of viruses. Give examples.
- What is Baltimore classification of viruses?
- Define syndromes
- What is the name of the first animal virus?
- What are the key steps of the viral replication cycle?
- Study Figure 3.29 on Lecture 4.
- HBV and infectious Dane particle?
- Why RNA viruses have more mutations?
- Define an etiological agent. Give an example
- What are the tools that are used for Laboratory Diagnosis of Viral Infections?
- How to detect HIV infection in the Lab?
- Why do we measure viral load?
- Why vertical flow laminar hood/(HEPA) filter is used in the Laboratory?
- Define CPE (cytopathic effect)
- What are the Common Methods Used to Study Viruses in the Research Laboratory?
- How many Biosafety level (BSL) are available to work with viruses?
- What are the Preferred Routes of Entry for viruses?

- Explain Rabies transmission
- Explain Influenza virus transmission. Flu/Asthma
- Explain Measles transmission
- What are the Mechanisms of Viral Spread or Pathogenesis?
- Give examples of viruses that can infect organs.
- What is a neurotropic virus?
- Viral infections and pregnancy
- Define Transplacental, perinatal, postnatal transmission
- Define acute infection, persistent infection, Chronic infection with continuous shedding of virus
- What are the factors affecting virus survival?
- Define localized viral infection versus systemic infection
- Define NK cells, dendritic cells, Macrophages?
- What are defensins, IFN, complement?
- Define the key players in the adaptive immunity
- Explain immunological memory, passive immunity
- Give an example of live, attenuated vaccine
- Give an example of recombinant vector vaccine, recombinant subunit vaccine & DNA vaccine
- Vaccines and Adjuvants?

VIROLOGY FINAL STUDY QUESTIONS

CHAPTER 7

1. Define an etiological agent. Give an example
2. What are the tools that are used for Laboratory Diagnosis of Viral Infections?
3. How to detect HIV infection in the Lab?
4. Why do we measure viral load?
5. Why vertical flow laminar hood/(HEPA) filter is used in the Laboratory?
6. Define CPE (cytopathic effect)
7. What are the Common Methods Used to Study Viruses in the Research Laboratory?
8. How many Biosafety level (BSL) are available to work with viruses?

CHAPTER 8

1. What are the characteristics of enteroviruses?
2. Poliovirus structure, receptor, host cell and how to inhibit or inactivate the virus?
3. Clinical symptoms after polio viral invasion (paralysis.....)
4. VPg mutation and virus replication?
5. IPV (Salk) and OPV (Sabin) vaccines for polio... Which one doesn't require a boost... Which one is discontinued for use in the USA.

CHAPTER 9

1. Influenza virus structure (know the proteins that are part of the ribonucleoprotein) M2? receptor, host cell?
2. How many viral particles can be found in a droplet of saliva or mucus?
3. Clinical symptoms after influenza viral infection
4. Rey's syndrome and Aspirin treatment?
5. Cap snatching and virus replication cycle
6. What animal model is used to study Influenza A virus ? Ferrets (share similar lung physiology)
7. Common cold viruses and Flu?
8. Flu Vaccines (FluMist and Fluzone), antigenic drift and antigenic shift CH 10
9. Mode of transmission of HAV and HEV
10. What is Cirrhosis
11. Life cycle of HCV and HBV/ treatments and tests (alanine aminotransferase levels to diagnose)
12. Viral load/Hep C
13. Vaccines are available for HAV and HBV

CHAPTER 11

1. Disease caused by the viruses? How to test for those viruses
2. Use of L-lysine?
3. Life cycle of the virus CMV?
4. VP16 and vhs functions?
5. Varivax? Zostavax?
6. CH 12
7. Define HIV-1 and HIV-2 and their mode of transmission, replication of the virus
8. Anti-retroviral therapy ART?
9. To test for HIV: ELISA, if the test is positive, confirmed using PCR
10. Function of nef, vif, gag, env, pol, …
11. Smallpox/HIV
12. Pre-exposure prophylaxis PREP?

CHAPTER 13

1. What are the characteristics of Rabies? Dumb rabies?
2. Rabies virus structure, receptor, host cell and life cycle of the virus?
3. Clinical symptoms after infection
4. Human rabies vaccine, dosages and how long it last…
5. Wildlife vaccine?

CHAPTER 14

1. Define the types of variola major
2. Replication steps of vaccinia viruses
3. How to diagnose smallpox
4. Smallpox vaccine?

CHAPTER 15

1. Define reassortment and antigen drift
2. Zika virus: mode of transmission
3. West Nile virus : hosts

CHAPTER 18

1. Define CJD/ prion contaminated?
2. What is PrPC? Its affinity to copper…
3. Define PrPres
4. What is a viroid and how does it replicate?
5. Scrapie ? CWD?

CHAPTER 19

1. Define a plant virus
2. What are the modes of transmission of those viruses?
3. TMV life cycle?
4. Plasmodesmata? Movement proteins?

CHAPTER 20:

1. What is a bacteriophage? Life cycle?
2. Biofilm? Lytic cycle, lysogenic cycle, temperate bacteriophage?
3. Prophage, holin...