Model Questions

for

Fish Immunology

FSHM 2106 (2+1)

**COURSE TEACHER**

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**Multiple choice Questions**.

1. Which of the following is a surface barrier in fish  
  
a) Mucus  
  
b) Skin  
  
c) Gill  
  
d) All  
  
2. a-2 macroglobulin in act as  
  
a) Growth inhibitor  
  
b) Enzyme inhibitor  
  
c) Precipitine

d) None  
  
3. Which of the following phagocytic cell present in fish?  
  
a) Macrophage  
  
b) Monocytes  
  
c) Neutrophils  
  
d) All  
  
4. Siderophores has high binding capacity for

a) Iron   
  
b) Copper

c) Zink  
  
d) None

5. CRP binds with component of microorganism.  
  
a) Sugar  
  
b) Phosphoethanoamine

c) Phosphoryl Choline  
  
d) None  
  
6. Myeloperoxidase present in blood cell of fish.  
  
a) Neutrophils  
  
b) Eosionophils

c) Basophils  
  
d) RBC  
  
7. Memory cell is derived from  
  
a) Plasma cell  
  
b) B cell  
  
c) T cell

d) None

8. is produce after viral infection

a) Interferon

b) Transferrin  
  
c) Lysozyme

d) CRP  
  
9. Which of the complement pathway is common in teleost?  
  
a) Classical  
  
b) Alternative  
  
c) Lectin  
  
d) All  
  
10. Which of the following is universal antimicrobial peptides found in fish?  
  
a) LEAP  
  
b) Piscidines   
  
c) Cathelicidins

d) All  
  
11. T helper cell recognize the microbial antigen in association with  
  
a) Class I MHC

b) Class II MHC  
  
c) Class III MHC

d) All

12. Which of the following is secondary lymphoid organ?  
  
a) Kidney

c) MALT  
  
b) Spleen

d) All  
  
13. Small molecules incapable of inducing antibody response is called .  
  
a) Epitopes  
  
b) Haptens

c) Antibody

d) None  
  
14. Prophenoloxidase system is induced by  
  
a) LPS  
  
b) B1-3 glucan  
  
c) Peptidoglycan  
  
d) All

15. Which Cell in mainly involve in phagocytic activity in crustacean?  
  
a) Hyaline

b) Semigranular

c) Granular

d) All  
  
16. Complement system first demonstrated by

a) Jules Bordel

b) Burnet  
  
c) Peter Gorer

d) None

17. CD8+ cell is .  
  
a) Th

b) Tc  
  
c) Ts

d) Td

18. Natural Cytotoxic cell in fish is similar to cells of mammals.  
  
a) NK Cell

b) B cell

c) T suppressor cell

d) None

19. Immunology derives from word ‘Immunis’ which is a words.  
  
a) Greek

b) Arabic

c) Latin

d) French  
  
d) NCC  
  
20. Fish lysozyme is found in  
  
a) Phagocytic cell

b) Serum  
  
c) Mucus

d) All  
  
20. Plasma cell dies within days.

a) 3-6 days  
  
b) 1-2 days  
  
c) 10-15 days

d) 20 days  
  
22. T cytotoxic cell recognize microbial antigen in association with MHC  
  
a) Class I

b) Class II

c) Class III

d) both a & c  
  
23. Which of the following immunoglobulin can cross the placenta?

1. IgM
2. IgE
3. IgD
4. IgG

**Match the following:**

1) Eosinophils a) Phagocytosis and bacteriocidal mechanisms

2) Macrophages b) Lysis of some virally infected cells

3) Tissue mast cells c) Killing parasites

4) Natural killer cells d) Release of histamine and other mediators

5) Neutrophils e) Phagocytosis and bacteriocidal mechanisms

**Fill in the blanks**:

1. Fish have both & responses against pathogen like vertebrates.
2. Serum lysozyme level decreases in fish during \_\_\_\_ period.
3. Transferrin is an iron binding \_\_\_\_\_.
4. RTPCT technique have standardized to detect \_\_\_\_\_in shrimp.

**State True or False:**

1. Serum lysozyme level increases during stress period
2. Lectins are proteins and found in fish egg.
3. PCR based diagnosis is the white spot virus disease in shrimp.
4. Non-specific immunity is the first line of defense.
5. Interferons are glycoproteins.

**Expand the following term**

1. WSSV
2. SEMVB
3. ELISA
4. RFLP
5. PCR

**Long Questions**

1. Write the techniques of fish immunization.
2. Write briefly PCR-based diagnosis of white spot disease in shrimps.
3. Explain Serological methods in fish disease diagnosis.
4. Write briefly on specific & non-specific immune systems in fishes.
5. Write short notes
6. Agglutination test
7. Advantages of molecular diagnostics