

**1) One of the following is ssDNA virus:**

**a-Herpes virus**

**b-Papillomavirus**

**c-Reovirus**

**d-Adeno-associated virus**

**2) Picovirinae is considered a ..... In virus taxonomy:**

**a-Family**

**b-Subfamily**

**c-Genus**

**d-Species**

**3) If  $10^{10}$  cells are infected at MOI=20, 21 cells are found uninfected AT MOST. What can you tell about the growth cycle of these virions?**

**a-They have multi-step growth cycle**

**b-They have a logarithmic growth curve similar to bacteria**

**c-They have one-step growth cycle**

**d-We need more information to decide**

**4) Which of the following methods can be used to quantify infectious viruses only?**

**a-Counting them through the microscope**

**b-Plaque assay forming unit**

**c-End point dilution assay**

**d-More than one of the above**

**5) Which of the following is false regarding lateral flow assay?**

- a-It is an example of serological tests
- b-It is based on the energy of capillary flow
- c-Control line prevents false negative errors
- d-None of the above is false

**6) To get a symptomatic infection, you need 5000 particles of virus A or 500 particles of virus B, which of the following is correct?**

- a- Virus A has a higher inoculum size than virus B
- b- Virus B has a higher inoculum size than virus A
- c- Virus A is more virulent than virus B
- d-More than one of the above

**7) All of the following is true regarding naked viruses except:**

- a-They are released by lysis only
- b-They can tolerate stomach acidity
- c-HSV is an example
- d-They are resistant to detergents

**8) Not true regarding primary cell lines and immortal cell lines:**

- a-Primary cell lines live forever
- b-Immortal cell lines are basically cancer cells
- c-HeLa is an example of immortal cell lines
- d-Primary cell lines resemble actual cells more than immortal cell lines

**9) In most bacteria, the capsule consists mainly of:**

**a-Polysaccharides**

**b-Proteins**

**c-Lipids**

**d-Metals**

**10) Which of the following is NOT true regarding bacterial cell wall?**

**a-Can be gram-positive or gram-negative**

**b-Is found in ALL bacteria**

**c-Protects against osmotic changes**

**d-A target for many antibiotics**

**11) One of the following is both an enrichment and differential culture media:**

**a-Blood agar**

**b-MacConkey agar**

**c-Mannitol salt agar**

**d-Amies medium**

**12) Which of the following will most likely cause a skin infection?**

**a-Staphylococcus**

**b-Treponemas**

**c-Nocardia**

**d-Borrelia**

**13) One of the following is part of vaginal normal flora:**

**a-E. coli**

**b-Neisseria**

**c-Lactobacilli**

**d-Yeast**

**14) Penicillin is a widely used antibiotic which targets beta-lactam ring in the outer layer of bacteria. It was discovered by:**

**a-Kary Mullis**

**b-Alexander Fleming**

**c-Robert Koch**

**d-Louis Pasteur**

**15) The correct order of bacterial growth stages is:**

**a-Lag phase > Log phase > death phase > stationary phase**

**b-Lag phase > Log phase > stationary phase > death phase**

**c-Log phase > Lag phase > death phase > decline phase**

**d-Lag phase > stationary phase > death phase > exponential phase**

**16) Tyndallisation involves:**

**a-Exposure to steam at 100°C for 20-30 mins**

**b-High pressure saturated steam at 121°C**

**c-Exposure to humid heat at 75°C for 2 hours**

**d-Exposure to 170°C for 1-2 hours**

**17) Infra-red rays are used to sterilize:**

- a-Operating theatres**
- b-Disposable plastic items**
- c-Glassware and syringes**
- d-IV fluids**

**18) Conjugation is best described as:**

- a-Plasmid movement by cell-cell contact**
- b-Uptake of naked DNA**
- c-Using bacteriophages as vectors**
- d-Jumping genes**

**19) Which of the following is false regarding specialized transduction?**

- a-It is carried out by temperate bacteriophages**
- b-It always leads to direct lysis of host bacterial cell**
- c-'Lysogeny' and co-existing can be observed**
- d- None of the above is false**

**20) Distribution of skin normal flora is affected by:**

- a-Secretions**
- b-Habits of clothes wearing**
- c-Proximity to mucous membranes**
- d-All of the above**

**21) An effective treatment of Clostridium difficile infection (CDI) is:**

- a-Fecal matter transplant**
- b-Avoiding caesarean section delivery**
- c-DNA based approaches**
- d-Antibiotics**

**22) Which of the following is NOT true regarding flagella?**

- a-They are made of subunits called flagellins**
- b-They help in motility**
- c-They are not antigenic**
- d-Their rotation machinery utilizes proton gradient**

**23) Which of the following best describes type III secretion pathway?**

- a-It secretes endotoxins with the help of ATP hydrolysis**
- b-It is a contact-independent pathway**
- c-It is found in gram-positive bacteria**
- d-It used by GI enterotoxin-producing bacteria such as Salmonella and Shigella**

**24) Rickettsia, a genus of intracellular bacteria, are the causative agent of 'Rocky Mountain spotted fever'. If a patient is suspected to have this disease, which of the following can be used to have the finest highly-magnified image of intracellular components?**

- a-Brightfield microscopy**
- b-Darkfield microscopy**
- c-fluorescent microscopy**

**d-Electron microscopy**

**25) NETs, produced by neutrophils, are mainly composed of:**

**a-Proteins**

**b-DNA**

**c-Phospholipids**

**d-Polysaccharides**

**26) Molecule X was presented on MHC II molecules on the surface of a dendritic cell. What can you tell about the identity of this molecule?**

**a-It is an intracellular viral protein**

**b-It is a normal, self-antigen**

**c-It was obtained from extracellular bacteria**

**d-It is a component of lipid A found in gram-negative bacteria**

**27) Which of the following is true regarding natural killer cell?**

**a-Its action is controlled by phosphorylation/ dephosphorylation**

**b-It is part of the adaptive immunity**

**c-It is a derivative of myeloid stem cells**

**d-All of the above**

**28) According to CD identification system, CD4+ and CD8+ are respectively:**

**a-B cells, T cells**

**b-Cytotoxic T cell, Helper T cell**

**c-Helper T cell, Cytotoxic T cell**

**d- $\gamma\delta$  T cells,  $\alpha\beta$  T cells**

**29) Which of the following is considered a DAMP?**

**a-LPS**

**b-Urate crystals**

**c-dsRNA**

**d-Flagellin**

**30) Which of the following is most related to the inflammasome pathway?**

**a-Scavenger receptors**

**b-RIG-like receptors**

**c-TLR5**

**d-NOD-like receptors**

**31) Which of the following is not part of bacterial phagocytosis process?**

**a-MAC complex**

**b-C3b**

**c-Respiratory burst**

**d-Lysozymes**

**32) How many CDRs can be found on a pentameric IgM antibody?**

**a-6**

**b-15**

**c-60**

**d-5**



**33) TNF is primarily produced by:**

**a-Macrophages**

**b-Plasma cells**

**c-Endothelial cells**

**d-NK cells**

**34) Which of the following drives monocytes to the M2 activation pathway?**

**a-DAMPs**

**b-IL-1**

**c-IFN- $\gamma$**

**d-IL-10**

**35) In eczema, recurrent infections can be observed in the:**

**a-Skin**

**b-GI tract**

**c-Bronchi**

**d-None of the above**

**36) Which of the following molecules alternate between bent and extended conformations in response to certain chemokines?**

**a-ICAM-1**

**b-LFA-1**

**c-P-selectins**

**d-Sialylated carbohydrates**

**37) Which of the following is least likely to get rejected by the recipient?**

**a-Allografts**

**b-Isografts**

**c-Xenografts**

**d-All have the same probability**

**38) Which of the following is true regarding spleen?**

**a-Peyer's patches are part of it**

**b-Red pulp and white pulp have the exact same function**

**c-It filters blood coming from hepatic portal vein**

**d-Lacking a spleen would increase susceptibility to encapsulated bacterial infections**

**39) Which of the following is not associated with complement alternative pathway?**

**a-Mannose-binding lectin**

**b-Blood factor B**

**c-Bacterial surface**

**d-C3b**

**40) Which of the following regulators prevent TCC formation?**

**a-CD55**

**b-CD59**

**c-Factor H**

**d-CD46**

# ANSWERS

1	D	21	A
2	B	22	C
3	C	23	D
4	D	24	D
5	C	25	B
6	A	26	C
7	C	27	A
8	A	28	C
9	A	29	B
10	B	30	D
11	A	31	A
12	A	32	C
13	C	33	A
14	B	34	D
15	B	35	A
16	A	36	B
17	C	37	B
18	A	38	D
19	B	39	A
20	D	40	B

*GOOD LUCK!!*