Micro CNS Essay Questions

Enumertae Virulence factors of Neisseria meningitidis.	1- Polysaccharide capsule (the most important) 2- Pili and outer membrane proteins for adhesion. 3- IgA proteases which inactivate IgA. 4- Endotoxin damage the ciliated cells
Mention characters of CSF in acute bacterial meningitis.	Turbid, under tension, low glucose value, high protein level, and contains polymorphonuclear cells
Enumerate two culture methods for Neisseria meningitidis.	1- cannot grow on ordinary media 2- can grow on chocolate agar. 3- Thayer-Martin media is selective media
Why Thayer-Martin media is selective media for Neisseria meningitidis.	contains antimicrobials which inhibit the growth of organisms other than pathogenic Neisseria. o**Vancomycin** kill most gram-positive bacteria o**Colistin** kill most gram-negative bacteria including commensal Neisseria spp., except pathogenic Neisseria o**Nystatin** kill most fungi.
Mention two Biochemical reactions Neisseria meningitidis.	A- Oxidase test: all pathogenic Neisseria are oxidase positive. B- Sugar fermentation: N. Meningitidis ferment glucose and maltose with acid production
Mention two methods of prevention for Neisseria meningitidis.	**Meningococcal Vaccines** • Meningococcal conjugate vaccines (MenACWY vaccines). • Serogroup B meningococcal vaccines (MenB vaccines).

	Chemoprophylaxis • In case of close contact with meningococcal meningitis case. • **Rifampicin** or Ciprofloxacin is chemoprophylactic agent of choice. • **Ceftrixone**, an alternative
Compare between bacterial and mycobacterial meningitis according to CSF.	CSF is less turbid. ✓CSF contains lymphocytes; low glucose and high protein levels. ✓ Direct film of CSF is examined by Ziehl-Neelsen stain to demonstrate acid fast bacilli
Listeria monocytogenes	
Enumerate culture characters for L. monocytogenes.	Grows on ordinary medium.-Produces β- hemolysis on blood agar.-The optimal growth temperature for is 30-35° C.-Can grow slowly in the cold even at temperatures as low as 1°C, so can grow in contaminated food stored in the refrigerator.
Enumerate Virulence factors of L. monocytogenes.	●**Growth at low temperatures:** L. monocytogenes can grow at low temperature, so it can accumulate in contaminated food stored in the refrigerator. ●Motility: Which may help in attachment and penetration of intestinal mucosa ●**Adherence and Invasion:** Listeria can attach to and enter mammalian cells using a surface protein called internalin. The bacteria are then taken up by phagocytes.

	● **Facultative intracellular bacteria:** After engulfment, the bacterium may escape from the phagosome before phagolysosome fusion occurs by toxin, which also acts as a hemolysin (listeriolysin O).
What is the mode of infection in listeriosis	**Eating contaminated meat**, vegetables, and milk products - multiply at low temperatures, so it can contaminate food stored in the refrigerator •**Congenital transmission** across the placenta (Intrauterine infection) •**Birth canal transmission** can occur during labor by bacteria colonizing the genital tract of the mother.
Compare between herpes simplex virus type 1-2 . ای نقطه ممکن تیجی	
Describe the primary infection of varicella zoster	A mild febrile illness with a characteristic vesicular rash which starts on the trunk and spreads to the limbs and face. Vesicles appear in successive waves so that the lesions of different stages are present together. Complications of Varicella are rare as meningitis, encephalitis and pneumonia.
Describe the latent Reactivation (Zoster or shingles)	Zoster is a sporadic disease of adults or immunosuppressed patients. ▪ Painful vesicles along the course of a sensory nerve of the head or the trunk (a belt of roses from hell). The pain can last for weeks, and

	post-zoster neuralgia may exist. ▪ In immunocompromised, disseminated infection as pneumonia can occur.
Mention two diagnostic methods for cytomegalovirus	Virus isolation in cell culture, CPE is 2-3 weeks (typical swollen and translucent cells with intranuclear inclusion bodies. ▪ Fluorescent antibody & histological staining of inclusions in giant cells in urine and in tissue. The inclusion bodies are intranuclear oval (owls eye) shape ▪ PCR for detection of CMV nucleic acid in tissues or body fluid as CSF. ▪ Serological test to detect rising IgG titer or IgM.
Mention the Clinical Significance of Epstein Barr virus	infectious mononucleosis: −Disease is manifested by fever, headache, malaise, −Lymphadenopathy and increased level of liver enzymes −EBV and malignancies: −Burkitt's lymphoma (jaw malignancy in African children) −Nasopharyngeal carcinoma. 2. Latency and reactivation: in B lymphocytes,breactivation, results in lytic cycle
Enumerate complications of measles	Bronchopneumonia and otitis media (with or without secondary bacterial infections). ▪ Encephalitis occurs in ~1:2000 cases.

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<tr><td></td><td>▪ Subacute sclerosing pan-encephalitis: It is a chronic infection in which the virus multiplies in the brain resulting in neurodegenerative disease</td></tr>
<tr><td>Enumerate complications of mumps</td><td>Aseptic meningitis: fairly common complication. In about
half of the mumps meningitis cases, parotitis will not be
apparent.
▪Mumps meningoencephalitis: is rare but a more serious development.
▪ Orchitis: can occur, more often after puberty, but is rarely followed by infertility. Other glandular tissue pancreatitis, oophoritis or thyroiditis.</td></tr>
<tr><td>Mention causes primary and secondary encephalitis.</td><td><table><tr><th>PRIMARY</th><th>SECONDARY</th></tr><tr><td>1- Eastern equine encephalitis virus (EEE) =Togaviridae</td><td>1-measles virus</td></tr><tr><td>2- Western equine encephalitis virus (WEE)= Togaviridae (Rare in Egypt due to cross immunity with West Nile Fever Virus)</td><td>2-Rubella virus</td></tr><tr><td>La crosse encephalitis (Bunyaviridae)</td><td>3- Varicella zoster virus.</td></tr><tr><td>Rabies virus.</td><td></td></tr></table></td></tr>
<tr><td>Enumerate two diagnostic methods for rabies virus</td><td>Detection of viral antigens or nucleic acid: IF & PCR.
•2)Histopathological diagnosis by detection of Negri bodies in the brain or spinal cord.
•3) Isolation of the virus: infected tissue is inoculated into a suckling mice result in encephalitis & death.</td></tr>
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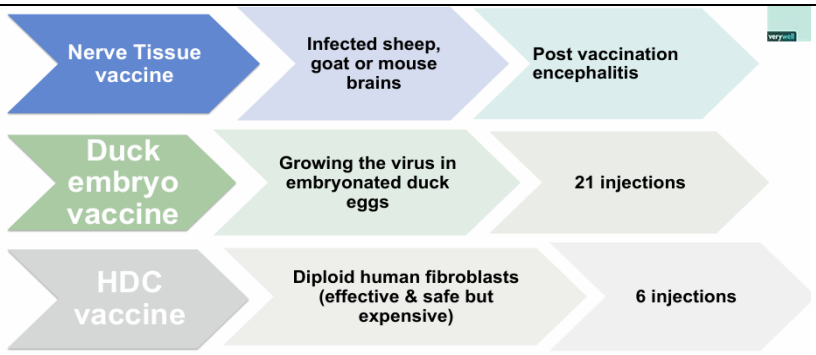
Enumerate types of human rabies vaccine	
Enumerate Virulence factors of Mucorales fungi	1- Thermotolerance 2- Rapid growth: 3- Ability to penetrate tissues: 4- Iron acquisition: 5- Production of proteolytic enzymes:
Any diagnosis of fungi مهم	Enumerate two diagnostic methods for 1- Aspergillosis 2- Candida Infection 3- Mucormycosis (Zygomycosis)