14. **Match the following scientists with the discovery / invention associated**

1. Louis Pasteur	A. Electron microscope
2. Robert Koch	B. Clonal selection theory
3. Ernst Ruska	C. Vaccine for Rabies
4. Alexander Fleming	D. Penicillin
	E. Tubercle bacillus

Ans. 1._____ **2.**_____ **3.**_____ **4.** _____

15. **Match the following items with their methods of sterilisation:**

1. Cystoscope	A. Red heat
2. Disposable plastic item	B. Inspissation
3. Lowenstein Jensen medium	C. Glutaradehyde
4. Bacteriological wire loop	D. Autoclave
	E. Gamma radiation

Ans. 1._____ **2.**_____ **3.**_____ **4.** _____

Assertion-Reason type **(1x2=2)**

Each question given below consists of two paired statements. Statement a – (assertion) & statement b – (Reason) connected by the term "because". Mark the appropriate answer using the key given below.

A- If both assertion & reason are true statements and the reason is the correct explanation of the assertion
B- If both assertion & reason are true statements and the reason is NOT the correct explanation of the assertion
C- If the assertion is true and the reason is false
D- If both assertion and reason are false

16. **Regarding immunity:**

a. **Assertion -** Natural passive immunity involves passage of maternal IgG antibodies to foetus transplacentally and is protective

b. **Reason** - IgG is the only immunoglobulin that can pass through placenta

Ans. _____

17. **Regarding Mycobacterium leprae**

a. **Assertion** - Lepromin test is positive in Tuberculoid leprosy

b. **Reason** - Cell mediated immunity is adequate in Tuberculoid leprosy

Ans. _____

***** The End *****

15

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2016

Time: 3 Hrs **Microbiology (Paper–II)** **Max. Marks: 75**

Answer all the questions. Draw the diagrams wherever necessary. Use separate answer sheet for Section A & B.

Section – A

Q1. Classify Helminths of human importance. Discuss mode of transmission and life cycle of Ancyclostoma duodenale.

(4+2+4=10)

Q2. Draw a neat, labelled diagram of Rabies virus. Discuss the pathogenesis and laboratory diagnosis of rabies. **(3+3+4 =10)**

Section – B

Q3. Write Short Answers: **(6x5=30)**

(a) List out the morphologic differences between *Plasmodium vivax* and *P falciparum* on peripheral bold smear examination

(b) Rhinosporidiosis

(c) Cultivation of viruses

(d) Free living pathogenic amoeba

(e) Dimorphic fungi

(f) Fungal toxins

*****

14

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2016

Time: 3 Hrs **Microbiology MCQ (Paper – II)** **Max. Marks: 75**
Time : 30 mts. (MCQ) **MCQ: 25 Marks**

Section – C

Single Response Type: **(Please (✓) on appropriate answer)** **(1x5=5)**

1. Which of the following is the causative agent of Tinea versicolor?

a. *Trichosporon beigelii*

b. *Malassezia furfur*

c. *Piedraia hortae*

d. *Trichophyton violaceum*

2. The hyphae of Zygomycetes are:

a. Pigmented

b. Branching at acute angles

c. Septate

d. Nonseptate

3. Megaloblastic anaemia is seen in:

a. Diphyllobothriasis

b. Ankylostomiasis

c. Tapeworm infection

d. Hydatid cyst

4. Live attenuated vaccine is <u>not</u> available against the following virus:

a. Varicella-Zoster Virus

b. Hepatitis B Virus

c. Rubella Virus

d. Yellow Fever Virus

Roll No : AIIMS BBSR-2014/MBBS/_____

5. **All are double stranded DNA viruses except:**

a. Herpes simplex

b. Parvo virus

c. Adenovirus

d. Pox virus

Multiple Completion Type (1x2=2)

Each of the following questions/statements has one or more correct response(s). Answer using the following key:

A. Only 1,2 and 3 are correct
B. Only 1 and 3 are correct
C. Only 2 and 4 are correct
D. Only 4 is correct
E. All 4 are correct

6. **True regarding Retroviruses:**

1. The envelop made up of lipid and viral protein
2. Genome made up of two molecules of viral DNA
3. Genetic information is passed from RNA to DNA
4. RNA polymerase present within protein

7. **Regarding PRIONS:** **Ans.** _____

1. They contain RNA
2. Susceptible to proteinases
3. They cannot be transmitted to experimental animals
4. Cause chronic progressive degenerative disease of CNS

True False Type **(Write 'T' for True & 'F' for False)** **Ans.** _____ (2x4=8)

8. **Regarding Arbo viral diseases:**

1. Members of this group have common ecological & epidemiological properties
2. They strictly infect humans
3. Usually manifested as fever with rash & haemorrhage or encephalitis
4. Crimean Congo haemorrhagic fever is transmitted by ticks

Ans 1. _____ 2._____ 3._____ 4._____

9. **Regarding Aspergillus species**

1. It causes mycetoma
2. Aflatoxin is produced by *Aspergillus fumigatus*
3. It has septate hyphae
4. Aspergillus species has right angle branching

Ans 1. _____ 2._____ 3._____ 4._____

10. **Regarding Intracytoplasmic inclusion bodies:**

1. Negri bodies are seen in Rabies virus
2. Guarnieri bodies are seen in variola virus.
3. Cowdry type A inclusions seen in Herpes si
4. Molluscum bodies are seen in Molluscu

Ans. 1._____ 2._____

11. **Regarding Entamoeba histol**

1. Mature cyst contain
2. Precyst is the inf
3. It causes ulce
4. Amoebic ul

Ans. 1._____

Match Type

12. Ma

13

10. Regarding Intracytoplasmic inclusion bodies:

1. Negri bodies are seen in Rabies virus
2. Guarnieri bodies are seen in variola virus.
3. *Cowdry type A inclusions seen in Herpes simplex*
4. Molluscum bodies are seen in Molluscum contagiosum

Ans. 1._____ 2._____ 3._____ 4. _____

11. Regarding *Entamoeba histolytica*:

1. Mature cyst contains 8 nuclei
2. Precyst is the infective form
3. It causes ulcers most commonly in caecum
4. Amoebic ulcers generally do not extend beyond submucosa

Ans. 1._____ 2. _____ 3. _____ 4. _____

Match Type **(2x4=8)**

12. Match the viral infections with the vaccine strains

1. Mumps	A. Semple
2. Measles	B. Oka
3. Chiken pox	C. Jeryl-Lynn
4. *Yellow fever*	D. 17D
	E. Edmonston-Zagreb

Ans . 1._____ 2._____ 3._____ 4._____

13. Match the pathogens with their corresopnding vectors:

1. Plasmodium	A. Ticks
2. Babesia	B. Culex mosquito
3. Chikungunya	C. Female Anopheles
4. West Nile	D. Aedes aegypti
	E. Mite

Ans . 1._____ 2._____ 3._____ 4._____

14. Match the parasites to their respective drugs of choice

1. *Plasmodium falciparum*	A. Sodium stibogluconate
2. *Toxoplasma gondii*	B. Albendazole
3. *Taenia solium*	C. Spiramycin
4. *Leishmania donovani*	D. Artemisinin

Ans. 1._____ 2._____ 3._____ 4. _____

15. Match the dimorphic fungi to their corresponding phenotypic prope

1. *Histoplasma capsulatum*	A. Broad based budding
2. *Blastomyces dermatitidis*	B. Tuberculate macroconidia
3. *Coccidiodes immitis*	C. Multiple budding
4. *Paracoccidiodes brasiliensis*	D. Spherules with endospores

Ans. 1._____ 2._____ 3._____ 4. _____

(1x2=2)

Assertion-Reason type

Each question given below consists of two paired statements. Statement a – (assertion) & statement b – (Reason) connected by the term "because". Mark the appropriate answer using the key given below.

A- If both assertion & reason are true statements and the reason is the correct explanation of the assertion
B- If both assertion & reason are true statements and the reason is NOT the correct explanation of the assertion
C- If the assertion is true and the reason is false
D- If both assertion and reason are false

16. Regarding *Strongyloides stercoralis* infection

Assertion – Hyperinfection syndrome with *Strongyloides stercoralis* is described in patients receiving high-dose corticosteroids and organ transplant recipients

Reason - Premature accelerated transformation of rhabditiform larvae into filariform larvae occurs in the intestinal lumen

Ans. _____

17. Assertion: Sexual transmission accounts for most cases of HIV infection worldwide

Reason: Mucosal transmission of the virus is very efficient

Ans. _____

***** The End *****

12

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2016

Time: 3 Hrs | Microbiology (Paper–I) | Max. Marks: 75

Answer all the questions. Draw the diagrams wherever necessary. Use separate answer sheet for Section A & B.

Section – A

Q1. Classify streptococci. Define various virulence factors produced by *S. pyogenes*. Discuss laboratory diagnosis of *S. Pyogenes* infection.

(2+4+4=10)

Q2. Classify various methods of sterilization. Discuss sterilization by moist heat.

(4+6=10)

Section – B

Q3. Write Short Answers: **(6x5=30)**

(a) Alternative pathway activation of complement system

(b) Laboratory diagnosis of Pneumococcal meningitis

(c) NK Cell

(d) Laboratory diagnosis of gonorrhoea

(e) Non tuberculous Mycobacteria

(f) Describe the characteristic features of antibodies. Draw a labelled diagram of Immunoglobulin M.

*****

(11)

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2016

Time: 3 Hrs **Microbiology MCQ (Paper – I)** **Max. Marks: 75**
Time : 30 mts. (MCQ) **MCQ: 25 Marks**

Section – C

Single Response Type: **(Please (✓) on appropriate answer)** **(1x5=5)**

1. Draughtsman or carom coin appearance of colonies on Blood Agar found in :

a. *Streptococcus agalactae*

b. *Streptococcus pneumoniae*

c. *Streptococcus pyogenes*

d. *Streptococcus viridans*

2. Which of the following species of the family Rickettsiaceae is responsible for causing endemic typhus?

a. *R prowazekii*

b. *R typhi*

c. *R conori*

d. *R akari*

3. The term "Vaccine"was coined by:

a. Edward Jenner

b. Louis Pasteur

c. Karl Landsteiner

d. Frank Burnet

4. Which of the following test is a precipitation reaction:

a. Wasserman reaction

b. Well-Felix

c. VDRL

d. Pual-Bunnel

Roll No. :AIIMS BBSR-2014/MBBS/_____

5. **Staphylococcal toxic shock syndrome is due to:**

a. Enterotoxin A

b. Enterotoxin E

c. Enterotoxin D

d. Enterotoxin F

(1x2=2)

Multiple Completion Type

Each of the following questions/statements has one or more correct response(s). Answer using the following key:

A. Only 1,2 and 3 are correct
B. Only 1 and 3 are correct
C. Only 2 and 4 are correct
D. Only 4 is correct
E. All 4 are correct

6. **The following is/are true for complement:**

1. It is destroyed by heating at 56° C for half an hour
2. It takes part in type III Hypersensitivity reaction
3. IgG4 does not fix complement
4. VDRL is a complement fixation test

Ans. _____

7. **Following are the features of Agar:**

1. Bacteriologically inert
2. No nutritive value
3. Sets at 42°C
4. Melts at 90°C

Ans. _____

True False Type **(Write 'T' for True & 'F' for False)** **(2x4=8)**

8. **Diseases transmitted by louse**

1. Endemic typhus
2. Scrub typhus
3. Trench fever
4. Relapsing fever

Ans 1. _____ 2._____ 3._____ 4._____

9. **Regarding *Escherichia coli***

1. Enteroaggregative *E coli* causes traveller's diarrhea
2. Sereny test used to be employed for the diagnosis of enterotoxigenic *E coli*
3. Typical serotype associated with HUS is O157:H7
4. Sorbitol MacConkey medium helps in screening of enteroinvasive *E coli*

Ans 1. _____ 2._____ 3._____ 4._____

10

10. Regarding antigen-antibody reaction

1. Coomb's test detect incomplete antibody
2. Rocket electrophoresis is used to quantitate antigen
3. Single radial immune diffusion is used to quantitate Immunoglobulin in serum
4. Prozone phenomenon is seen in antigen excess in agglutination

Ans. 1._____ 2._____ 3._____ 4. _____

11. Regarding Donovanosis

1. Caused by *klebsiella granulomatis*
2. Also called lymphogranuloma venereum
3. The causative organism can grow easily in common laboratory media
4. Tetracycline is the treatment of choice

Ans. 1._____ 2. _____ 3. _____ 4. _____

Match Type (2x4=8)

12. Match the vaccine with the type of preparation

1. BCG	A. Toxoid
2. Salk polio	B. Live
3. Hepatitis B	C. Subunit
4. *Hemophilus influenza* Type B	D. Killed
	E. Cellular fraction

Ans . 1._____ 2._____ 3._____ 4._____

13. Match the following with appropriate relation

1. *Burkholderia pseudomallei*	A. Naegler's reaction
2. *Cl. perfringens*	B. Safety pin appearance
3. *Pseudomonas aeruginosa*	C. Rapid Urease production
4. *Helicobacter pylori*	D. Pyocyanin

Ans . 1._____ 2._____ 3._____ 4._____

14. Match the following diseases with causative organism

1. Syphilis	A. *Treponema caratem*
2. Epidemic relapsing fever	B. *Borrelia burgdorferi*
3. Lyme disease	C. *Treponema pallidum*
4. Pinta	D. *Borrelia recurrentis*

Ans. 1._____ 2._____ 3._____ 4. _____

15. Match the bacteria with their appropriate therapeutic agents

1. *Mycobacterium leprae*	A. Penicillin G
2. *Treponema pallidum*	B. Doxycycline
3. *Mycoplasma pneumoniae*	C. Dapsone
4. Burkholderia pseudomallei	D. Ceftazidime

Ans. 1._____ 2._____ 3._____ 4._____

(1x2=2)

Assertion-Reason type

Each question given below consists of two paired statements. Statement a – (assertion) & statement b – (Reason) connected by the term "because". Mark the appropriate answer using the key given below.

A- If both assertion & reason are true statements and the reason is the correct explanation of the assertion
B- If both assertion & reason are true statements and the reason is NOT the correct explanation of the assertion
C- If the assertion is true and the reason is false
D- If both assertion and reason are false

16. Regarding Weil-Felix reaction

Assertion – Weil-Felix reaction is an useful serological test in Rickettsial infections
Reason - The basis of Weil-Felix reaction is sharing of antigens between Ricketsia and Shigella

Ans. _____

17. Regarding Gram stain

Assertion: Gram positive bacteria resist decolourization and retain primary stain

Reason: Gram positive bacterial cell wall has a thick peptidoglycan layer

Ans. _____

***** The End *****

09

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS (Supplementary) Examination 2015

Time: 3 Hrs | Microbiology (Paper – I) | Max. Marks: 75

Answer all the questions (Subjective 50 + MCQ 25)

Section – B (Long Questions) Total Marks : 50

1. Define immunity. Classify with suitable examples. Discuss the mechanism of innate immunity. [1+3+6]

2. Classify Vibrio cholera based on serology. Discuss the pathogenesis & lab diagnosis of cholera . [2+3+5]

3. **Short Notes** [6X5]

(a) Principle and uses of Hot air oven
(b) Bacterial capsule
(c) Difference between active and passive immunity
(d) Mantoux test
(e) Exotoxin versus endotoxin
(f) Diseases produced by *Staph. aureus*

08

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS (Supplementary) Examination 2015

Time: 3 Hrs | Microbiology (Paper – I) | Max. Marks: 75

Answer all the questions (Subjective 50 + MCQ 25)

Section – A (MCQs)

Total Marks : 25

Single response MCQs [5×1=5]

1. ***Geobacillus stearothermophilus*** **is used as the biological indicator for**

   (a) Hot air oven.
   (b) Autoclave.
   (c) γ- irradiation.
   (d) All of the above

2. **Fact true regarding bacterial flagella:**

   (a) Organ of locomotion
   (b) All bacteria possess it
   (c) Not antigenic
   (d) Special flagellum helps in conjugation

3. **Which of the following immunoglobulin crosses the placental barrier?**

   (a) Ig G
   (b) Ig A
   (c) Ig D
   (d) Ig M

4. **Which of the following bacteria is cell wall deficient:**

   (a) Mycoplasma
   (b) *Treponema pallidum*
   (c) *S. aureus*
   (d) Klebsiella species

5. **Which of the following describes the mechanism of action of diphtheria toxin?**

   (a) Forms pores in red blood cells causing hemolysis
   (b) Degrades lecithin in eukaryotic cell membranes
   (c) Causes release of tumor necrosis factor
   (d) Inhibits elongation factor-2

Multiple response type

Each of the following questions/statements has one or more correct responses. Answer using the following key.

A. Only 1, 2, 3 correct
B. Only 1 & 3 correct
C. Only 2 & 4 correct
D. Only 4 is correct
E. All four are correct

6. Regarding Salmonella spp.:
   (1) A parasite of human beings only
   (2) Produces colourless colonies on DCA
   (3) Are indole positive
   (4) H antigens produce fluffy clumps

7. **XDR -TB is defined as resistance to:**

   (1). INH + Rifampicin
   (2). Rifampicin +Pyrazinamide+Ethambutol+INH
   (3). Streptomycin+Rifampicin+INH+Pyrazinamide
   (4). INH + Rifampicin+ Fluoroquinolone+Injectable aminoglycoside

Mix-Match type: 8[4X2]

8. Match the following tests with the diagnostic purpose:

1.	CAMP test	A.	*Cl.perfringence*
2.	Elek test	B.	Lymhpogranuloma venereum
3.	Nagler reaction	C.	*Str.agalactiae*
4.	Frei test	D.	*C.diphtheriae*
		E.	*M.leprae*

9. Match the items with the method of sterilisation:

1. Liquid paraffin	A. Fumigation
2. Operation theatre	B. Glutaral dehyde
3. Serum	C. Filtration
4. Bronchoscope	D. Autoclaving
	E. Hot air oven

10. Match the scientists with their contributions

1. Louis Pasteur	A. Antiseptic surgery
2. Leeuwenhoek	B. M. tuberculosis
3. Joseph Lister	C. Pasteurization
4. Robert Koch	D. Microscope
	E. Electron microscope

11. Match the specific properties with their corresponding Immunoglobulins

1. Parasitic infection	a. Ig A
2. Mucosal Immunity	b. Ig D
3. Placental transfer	c. Ig E
4. Congenital infection	d. Ig M
	e. Ig G

2[1X2]

07

TRUE AND FALSE TYPE 8[4X2]

Mark True/ False against each statement

12. **Regarding bacterial genes**

(a) Plasmids are essential for bacterial survival
(b) Each gene undergoes mutation with a fixed frequency
(c) Mutation in presence of antibiotics provides survival advantage
(d) Lysogenic conversion never gives new property to a bacterium

13. **Regarding Serological tests for syphilis**

(a) VDRL is an example of slide agglutination test.
(b) Rapid plasma reagin (RPR) is a non-treponemal test.
(c) Biological false positive reactions are a major drawback of non treponemal tests.
(d)Non-treponemal tests are universally used as screening tests for syphilis.

14. **Regarding the immune system:**

(a). Spleen is a central lymphoid organ.
(b). CD8 cells can recognize MHC class 1 antigens.
(c). MHC II antigens are expressed over all nucleated cells of the body.
(d). Macrophages act as the major antigen presenting cells.

15. **Regarding bacterial spores:**

(a) Formed in condition of excess nutrition
(b) Extremely heat labile
(c) Easily stained by Gram's stain
(d) Bacillus and Clostridia are examples of spore forming bacteria

Assertion –reason type

2[1X2]

Each question given below consists of two paired statements. Statement A – (assertion) & statement B- (Reason) connected by the term "because". Mark the appropriate answer using the key given below.

A. If both assertion & reason are true statements and the reason is the correct explanation of the assertion.
B. If both assertion & reason are true statements and the reason is NOT the correct explanation of the assertion.
C. If the assertion is true and the reason is false.
D. If both assertion and reason are false.

16. **In post Streptococcal diseases**

A. Rheumatic fever is a non suppurative sequelae of *S pyogenes* infection.
B. Antigenic cross reaction exists between *Streptococci* & human heart tissue antigens.

17. **Regarding Rickettsial diseases :**

A. Weil-Felix reaction is one of the serological diagnostic test.
B. The basis of this test is sharing of antigen between *Rickettsiae & Proteus*..

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Examination 2015

Time: 3 Hrs | Microbiology (Paper – II) | Max. Marks: 75

Answer all the questions. Draw the diagrams wherever necessary. Use separate answer sheet for Section A & B.

Section – A

Q1. Discuss mode of transmission, pathogenesis and laboratory diagnosis of Visceral Leishmaniasis. **(1+3+6=10)**

Q2. Classify arboviruses. Describe pathogenesis and laboratory diagnosis of Dengue. **(3+ 3+4=10)**

Section – B

Q3. Write Short Answers: **(6x5=30)**

(a) Cryptococcal meningitis

(b) Inclusion bodies

(c) Classify dermatophytes. Explain difference between ectothrix and endothrix infection of hair

(d) Laboratory diagnosis of Filariasis.

(e) Mycetoma

(f) Polio Vaccine

******

02

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Examination 2015

Time : 3 Hrs Microbiology MCQ (Paper – II) Max. Marks: 75

Time : MCQ: 30 minutes MCQ: 25 Marks

Section – C

Single Response Type: (Please (✓) on appropriate answer) (1x5=5)

1. **Acute hemorrhagic conjunctivitis is caused by Enterovirus**

   a. 68

   b. 69

   c. 70

   d. 72

2. **Katayama fever is caused by**

   a. *S. japonicum*

   b. *S. mansoni*

   c. *S. hematobium*

   d. *F. hepatica*

3. **In vivax malaria**

   a. Rupture of trophozoites correlates with rise of body temperature in infected individuals.

   b. Presence of gametocytes in the blood when transfused can cause transfusion malaria.

   c. Antibody demonstration is useful diagnostic modality in malaria in endemic regions or countries.

   d. Relapse is a common feature.

4. **Oncogenic viruses are all, except**

   a. Human Tcell lymphotropic virus I

   b. Human Papilloma Virus

   c. Human Herpes virus 6

   d. Human Herpes virus 8

5. **Following is an example of human transmissible spongiform encephalopathy:**

a. Kuru

b. Maedi

c. Scrapie

d. Visna

(1x2=2)

Multiple Completion Type

Each of the following questions/statements has one or more correct response(s). Answer using the following key:

A. Only 1,2 and 3 are correct
B. Only 1 and 3 are correct
C. Only 2 and 4 are correct
D. Only 4 is correct
E. All 4 are correct

6. **True regarding the properties of fungi -**

1. Possess rigid cell wall containing chitin
2. All fungi are multicellular
3. They reproduce sexually, asexually or by both
4. Nuclei is ill defined

Ans. _____

7. **The following is/are true for Rabies diagnosis:**

1. Negri bodies are typically present in cerebellum.
2. Rapid virus antigen detection can be done by Immunofluorescence staining.
3. Negri bodies are present in 100% of the cases.
4. Seller's stain is used for detection of Negri bodies.

Ans. _____

(2x4=8)

True False Type

8. **Regarding Intestinal Nematodes**

1. *Ascaris lumbricoides* has a lung migration phase in their life cycle.
2. *Enterobius vermicularis* usually inhabits the duodenum.
3. *Strongyloides stercoralis* is an oviparous nematode.
4. Both round worm and hookworm infections are acquired by fecooral route.

Ans. 1. _____ 2._____ 3._____ 4._____

9. **Regarding transmission of the following diseases**

1. Lassa fever virus is spread by tick bite
2. Hanta virus is transmitted by inhalation of aerosolized rodent urine
3. Marburg virus can spread from person to person
4. Kyasanur Forest disease (KFD) virus spread from excreta of rodents

Ans. 1. _____ 2. _____ 3. _____ 4. _____

10. Regarding *Pneumocystis jirovecci*

1. Is now classified as protozoa.
2. Causes chronic meningitis in HIV positive patients.
3. Gomorimethanamine silver stain (GMS) is used for direct demonstration of cysts in clinical samples
4. Amphotericin B is the treatment of choice

Ans. 1. _____ 2. _____ 3. _____ 4. _____

11. Regarding use of embryonated eggs for virus cultivation :

1. Pock counting on chorioamniotic membrane is used for vaccinia
2. Yolk sac inoculation is used for rickettsial cultivation
3. Allantoic cavity is useful for primary isolation of influenza virus
4. Amniotic sac provides rich yield of paramyxoviruses

Ans. 1._____ 2. _____ 3. _____ 4. _____

(2x4=8)

Match Type

12. Match the pathogens with their corresponding vectors:

1. Dengue virus	A. *Culex tritaeniorhynchus*
2. *Leishmania donovani*	B. *Phlebotomous argentipis*
3. Japanese encephalitis virus	C. *Aedes aegypti*
4. *Trypanosoma spp.*	D. TseTse fly
	E. Mite

Ans. 1._____ 2._____ 3._____ 4. _____

13. Match the following fungal agents with their most appropriate associations

1. *Candida glabrata*	A. Endemic in western hemisphere.
2. *Cryptococcus neoformans*	B. Granuloma
3. *Blastomyces dermatidis*	C. Pigeon droppings
4. *Sporothrix schenkii*	D. Diabetes mellitus
	E. Allergic alveolitis

Ans.1_____, 2_____, 3_____4_____

14. Match the following clinical presentations to the corresponding parasites

1. Iron deficiency anaemia	A. *Diphyllobothrium latum*
2. River blindness	B. *Oncocerca volvulus*
3. Portal hypertension	C. *Necator americanus*
4. Megaloblastic anaemia	D. *Schistosoma japonicum*
	E. *Trypanosoma cruzi*

Ans. 1._____ 2._____ 3._____ 4._____

15. Match the clinical syndromes with the causative virus.

1. Erythema infectiosum	A. JC virus
2. Progressive multifocal leukoencephalopathy	B. BK virus
3. Lassa fever	C. Ebstein Barr virus
4. Infectious mononucleosis	D. parvovirus 19
	E. Arenavirus

Ans. 1._____ 2._____ 3._____ 4._____

Assertion-Reason type **(1x2=2)**

Each question given below consists of two paired statements. Statement a – (assertion) & statement b – (Reason) connected by the term "because". Mark the appropriate answer using the key given below.

A- If both assertion & reason are true statements and the reason is the correct explanation of the assertion
B- If both assertion & reason are true statements and the reason is NOT the correct explanation of the assertion
C- If the assertion is true and the reason is false
D- If both assertion and reason are false

16. Regarding hepatitis D virus
Assertion: Its introduction into non-endemic areas where HBV infection is common may lead to outbreak of hepatitis with high mortality.
Reason: It is a defective RNA virus.

Ans. _____

17. Assertion: Toxoplasma encephalitis is one of the AIDS defining illness
Reason: Reactivation of infection is due to impairment of humoral immunity.

Ans. _____

*** The End ***

06

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Examination 2015

Time: 3 Hrs | Microbiology (Paper-I) | Max. Marks: 75

Answer all the questions. Draw the diagrams wherever necessary. Use separate answer sheet for Section A & B.

Section – A

Q1. Enumerate the various methods of transmission of genetic material in bacteria. Write mechanism of any one of them. Tabulate the differences between resistance acquired by mutation and transferable drug resistance.

(2+4+4=10)

Q2. Describe the sample collection, processing and laboratory methods for diagnosis of pulmonary tuberculosis. **(2+2+6=10)**

Section – B

Q3. Write Short Answers: **(6x5=30)**

(a) Vaccines against Typhoid fever.

(b) Bacterial growth Curve

(c) IgA

(d) Lab diagnosis of Diphtheria.

(e) Type IV hypersensitivity reaction

(f) Enumerate five differences between *Streptococcus pneumonia* and Viridans Streptococci

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Examination 2015

Time: 3 Hrs | Microbiology MCQ (Paper – I) | Max. Marks: 75

Time : 30 mts. (MCQ) | MCQ: 25 Marks

Section – C

Single Response Type: (Please (✓) on appropriate answer) (1x5=5)

1. **Which of the following is NOT a selective medium?**
   a. Lowenstein Jensen
   b. Mannitol Salt agar
   c. Wilson and Blair
   d. Loeffler serum slope

2. **The following are included in the HACEK group except**
   a. *Haemophilus aphrophilus*
   b. *Cardiobacteriunm hominis*
   c. *Eikenelle corrodens*
   d. *Klebsiella ozanae*

3. **The functional nature of *Clostridium botulinum* toxin is**
   a. Cytotoxin
   b. Enterotoxin
   c. Neurotoxin
   d. Hemolycin

4. **Atypical pneumonia can be caused by:**
   a. *Staphylococcus aureus*
   b. *Klebsiella pneumonia*
   c. *Legionella pneumophilla*
   d. *Psuedomonas aeruginosa*

5. Causative agent of Glanders is:

a. *Burkholderia cepacia*

b. *Burkholderia mallei*

c. *Burkholderia pseudomallei*

d. *Stenotrophomonas maltophila*

Multiple Completion Type

Each of the following questions/statements has one or more correct response(s). Answer using the following key: (1x2=2)

A. Only 1,2 and 3 are correct
B. Only 1 and 3 are correct
C. Only 2 and 4 are correct
D. Only 4 is correct
E. All 4 are correct

6. **Following are true about enterohemorrhagic *Escherichia coli*:**

1. Associated with haemolytic uremic syndrome
2. Vascular endothelial cells are primary targets
3. O157:H7 is typical serotype
4. Sorbitol MacConkey medium useful in laboratory diagnosis

Ans. _____

7. Regarding the bacterial cell, following is/are true

1. Outer membrane proteins are present in gram negative bacteria.
2. Murein is the main strengthening component of cell wall.
3. Capsule helps in evading the immune system of host.
4. Pili help in the motility of bacteria

Ans. _____

True False Type **(Write 'T' for True & 'F' for False)** (2x4=8)

8. Regarding B & T lymphocytes & Nk cells

1. T cells bind to SRBC by CD2 to form rosette.
2. Phytohemagglutinin is a B cell mitogen .
3. The function of Yδ TCR T cells is believed to be immune survellance.
4. Cytotoxicity by NK cell is antibody & MHC dependent .

Ans 1. _____ 2._____ 3._____ 4._____

9. Regarding vaccines:

1. Yellow fever vaccine is a heat killed vaccine.__
2. BCG is the only live attenuated bacterial vaccine.__ ____
3. Salk polio vaccine imparts high herd immunity.__ ___
4. Live vaccines are contraindicated during pregnancy

Ans 1. _____ 2._____ 3._____ 4._____

10. Regarding Syphilis:

1. The causal agent of syphilis is *Treponem apallidum* subsp. pallidum.
2. Infections are almost always mucosal.
3. *T. pallidum* can be cultured on chorioallantoic membrane of chick embryo.
4. Doxycycline is the drug of choice.

Ans. 1._____ 2._____ 3._____ 4._____

11. Regarding Anthrax bacillus:

1. First pathogenic bacteria to be observed under microscope
2. First communicable disease to be shown to be transmitted by inoculation of infected blood
3. First bacillus to be isolated in pure culture
4. First bacterium used for preparation of an attenuated vaccine

Ans. 1._____ 2._____ 3._____ 4._____

Match Type (2x4=8)

12. Match the phenotypic properties to the corresponding bacteria

1. Stormy clot reaction	A. *Corynebacterium diphtheriae*
2. Mc Fadyean' reaction	B. *Vibrio cholerae*
3. Fried Egg colonies	C. *Bacillus anthracis*
4. Fish in stream appearance	D. *Mycoplasma pneumoniae*
	E. *Clostridium perfringes*

Ans . 1._____ 2._____ 3._____ 4._____

13. Match the following toxins with their effect

1. Enterohaemorrhagic *E. coli*	A. Rabbit ileal loop tie assay
2. Enterotoxigenic *E. coli*	B. Attachment effacement lesion
3. Enteroinvasive *E. coli*	C. Hep2 cell assay
4. Enteropathogenic *E. coli*	D. Sereny's test
	E. Vero cell toxicity

Ans . 1._____ 2._____ 3._____ 4._____

14. Match the following Chlamydia serovars with associated infections:

1. *Ch. trachomatis* D-K	A. Lymphogranuloma venereum
2. *Ch. trachomatis* A,B,C	B. Atherosclerosis
3. *Ch. trachomatis* L1,L2 ,L3	C. Genital tract infection
4. *Ch. pneumoniae*	D. trachoma
	E. Granuloma inguinale

Ans. 1._____ 2._____ 3._____ 4._____

15. Match the human diseases with the corresponding Rickettsia.

1. Epidemic typhus	A. *R akari*
2. Endemic typhus	B. *R typhi*
3. Rickettsial pox	C. *R Rickettsii*
4. Rocky mountain spotted fever	D. *R prowazekii*
	E. *R conori*

Ans. 1._____ 2._____ 3._____ 4. _____

Assertion-Reason type **(1x2=2)**

Each question given below consists of two paired statements. Statement a – (assertion) & statement b – (Reason) connected by the term "because". Mark the appropriate answer using the key given below.

A- If both assertion & reason are true statements and the reason is the correct explanation of the assertion
B- If both assertion & reason are true statements and the reason is NOT the correct explanation of the assertion
C- If the assertion is true and the reason is false
D- If both assertion and reason are false

16. Assertion - Gonorrhoea is presumptively diagnosed by demonstration of intracellular Gram negative diplococci in male uethral smear.

Reason - Gonococcus being obligate intracellular pathogen can't be grown in the laboratory media.

Ans. _____

17. Assertion: Immunity is serotype specific following pneumococcal vaccination.

Reason: Pneumococcal vaccine is a conjugate vaccine.

Ans. _____

***** The End *****