All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Examination 2018

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 organisms causing urinary tract infection. Discuss the sample collection, transport and approach to laboratory diagnosis of urinary tract infection. **(2+2+2+4=10)**

Q2. Discuss the factors of bacterial virulence with examples of each. **(10)**

Section – B

Q3. Write Short Answers: **(5x6=30)**

a) Contributions of Louis Pasteur

b) Describe various types of ELISA

c) Superantigens

d) Laboratory diagnosis of diphtheria

e) Gas gangrene

f) Enterohemorrhagic *Escherichia coli*

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2017

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.

Time: 2.5 hrs **Max for Marks Sec A+ Sec B: 50**

Section – A

1. Draw a neat, labelled diagram of HIV. Discuss laboratory diagnosis of HIV infection. **(4+6=10)**

2. Enumerate the parasites detected in peripheral blood. Discuss the life cycle of *Plasmodium falciparum* and its laboratory diagnosis. **(1+3+6=10)**

Section – B

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

a) Dermatophytes
b) Larva migrans
c) Types of Tissue culture
d) Candidiasis
e) Polio vaccine
f) Cysticercus cellulosae

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2017

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)** **(5x1=5)**

1. All the following are true about *Cryptococcus* EXCEPT-

a. Browning of colony on bird seed agar
b. Absence of capsule
c. Positive urea hydrolysis test
d. It is a yeast

2. Acanthamoeba produces:

a. Primary amoebic meningoencephalitis
b. Granulomatous amoebic encephalitis
c. Lung abscess
d. Liver abscess

3. Megaloblastic anaemia is seen in:

a. Diphyllobothriasis
b. Ankylostomiasis
c. Tapeworm infection
d. Hydatid cyst

4. Dimorphic fungi can occur as filaments or yeasts depending mainly On :

a. Environmental pH
b. Temperature
c. Moisture concentration
d. Availability of nutrients

5. Sandfly acts as a vector for:

a. African sleeping sickness
b. South American trypanosomiasis
c. Kala azar
d. River blindness

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(P.T.O)

(2x1=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. Regarding nematodes

1. *Ascris lumbricoides* is a tissue nematode.
2. Hookworm is transmitted through contaminated food and water.
3. Ova of *Trichuris trichura* is non-bile stained.
4. *Strongyloid stercoralis* is ovo-viviparous.

Ans. _____

7. Which of the following is/are caused by Herpes simplex virus -1:

1. Acute gingivostomatitis
2. Keratoconjuctivitis
3. Herpes labialis
4. Infectious mononucleosus

Ans. _____

True False Type (Write 'T' for True & 'F' for False) **(4x2=8)**

8. Regarding tapeworms

1. Cysticercus bovis is the larval stage of *Taenia saginata* and is the infective form to man.
2. Morphology of eggs are useful for differentiating between *Taenia saginata* and *Taenia solium.*
3. Human beings can serve both as definitive and intermediate host in case of *Taenia solium.*
4. *Echinococcus multilocularis* is the cause of alveolar Echinococcosis.

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

9. Regarding Rabies virus

1. It is a DNA virus
2. Negri bodies are present in the brain in all cases of Rabies
3. Direct Immunofluorescence is gold standard for diagnosis
4. Anti Rabies vaccine is a killed vaccine

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

(P.T.O)

10. Regarding Arbovirus:

1. Transmitted by arthropods
2. All are RNA virus under family 'Arboviridae'
3. All are zoonotic viral disease
4. In laboratory, mice are used for their growth

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

11. Regarding the characteristic features of fungi:

1. The cell wall contains chitin.
2. *Blastomyces dermatitidis* is a dimorphic fungi.
3. Ascospores are asexual spores.
4. Members of *Zygomycetes* have septate hyphae.

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

Match Type **(4x2=8)**

12. Match the following viruses with the diseases they produce:

1. Coronaviruses	A. Aplastic Crisis
2. Parvo B 19	B. Congenital malformation
3. EBV	C. SARS
4. Cytomegalo virus	D. Burkitt's lymphoma

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

13. Match the dimorphic fungi to their corresponding phenotypic properties

1. *Histoplasma capsulatum*	A. Broad , aseptate hyphae
2. *Blastomyces dermatitidis*	B. Tuberculate macroconidia
3. *Coccidiodes immitis*	C. Multiple budding
4. *Paracoccidiodes rasiliensis*	D. Spherules with ndospores
	E. Broad based budding

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

14. Match the parasite with the disease they produce

1. *Leishmania tropica*	A. Chagas disease
2. *Toxoplasma gondii*	B. Chorioretinitis
3. *Trypanosoma cruzi*	C. Katayama fever
4. *Schistoma mansoni*	D. Oriental sore.

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

(P.T.O)

15. Match the inclusion bodies with the respective viruses producing them -

1. Councilman body
2. Negri body
3. Cowdry B
4. Guarnieri body

A. Rabies virus
B. Polio virus
C. Yellow fever virus
D. Vaccinia virus

Ans. 1. _____ 2. _____ 3. _____ 4. _____ **(2x1=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

a) Hyperinfection is a condition where extensive internal reinfection occurs leading to dissemination of worms in various organs.
b) Hyperinfection is frequently seen in individuals with defective antibody mediated immunity.

Ans _____

17. Regarding influenza virus

a) Antigenic shift causes pandemic influenza.
b) Antigenic shift causes drastic, abrupt changes in antigenic structure.

Ans _____

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

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2017

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.

Time: 2.5 hrs **Max for Marks Sec A+ Sec B: 50**

Section – A

Q1. Enumerate the bacterial causes of diarrhoea. Discuss the laboratorydiagnosisofcholera.

(3+7=10)

Q2. Define antigen & antibody. Enumerate different antigen antibody reactions. Describe their different applications with examples.

(2+2+6 =10)

Section – B

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

a) Transduction.

b) Filtration as a process of sterilisation.

c) Specific tests for diagnosis of syphilis.

d) Differences between exotoxin & endotoxin.

e) Differences between Gram positive & Gram negative cell wall.

f) Virulence factors of *Staphylococcus aureus*

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All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Supplementary Examination 2017

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

Time : 30 mts. (MCQ) **Max Marks for Section-C(MCQ): 25**

Section – C

Single Response Type: **(Please (✓) on appropriate answer)** **(5x1=5)**

1. **The organ of adhesion of bacteria is:**
   a) Flagella
   b) Capsule
   c) Fimbriae
   d) Slime

2. **HLA complex is located on the short arm of**
   a) Chromosome 6
   b) Chromosome 8
   c) Chromosome 2
   d) Chromosome 5

3. **Post Streptococcal glomerulonephritis is an example of:**
   a) Type 1 hypersensitivity reaction
   b) Type II hypersensitivity reaction
   c) Type III hypersensitivity reaction
   d) Type IV hypersensitivity reaction

4. ***Mycobacterium tuberculosis* can be differentiated from non-tuberculous Mycobacteria by:**
   a) Production of phosphatase
   b) Production of oxidase
   c) Production of niacin
   d) Production of DNAse

5. **O157:H7 belongs to**
   a) ETEC
   b) EHEC
   c) EPEC
   e) EAEC

Multiple Completion Type (2x1=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. CMI plays an important role in

1) Allograft rejection
2) Anaphylaxis
3) Contact dermatitis
4) Idiopathic thrombocytopenic purpura

Ans. _____

7. Regarding *Clostridium difficile* the following is/ are true :

1) It is an anaerobic bacilli.
2) The toxin acts on neuromuscular junction.
3) Produces pseudomembranous colitis.
4) The drug of choice is oral penicillin.

Ans. _____

(4x2=8)

True False Type (Write 'T' for True & 'F' for False)

8. Regarding Salmonella

1. S.Typhi contains Vi antigen
2. Ceftriaxone is drug of choice for treatment of typhoidal Salmonella infection
3. Identified biochemically being Indole positive.
4. *Salmonella* Typhi is aerogenic

Ans 1. ____ 2.____ 3.____ 4.____

9. Regarding chlamydiae

1. They are obligate intracellular bacterial parasites of humans.
2. They cannot grow in cell free media.
3. They are not susceptible to antibiotics.
4. They replicate by binary fission

Ans 1. ____ 2.____ 3.____ 4.____

10. Regarding *Pseudomonas aeruginosa*

1. It utilizes glucose oxidatively.
2. It is fastidious and does not grow well on ordinary media.
3. Isolates from cystic fibrosis patients are mucoid due to production of alginate.
4. *Pseudomonas aeruginosa* is intrinsically resistant to many commonly used antimicrobials.

Ans 1. ____ 2.____ 3.____ 4.____

(P.T.O)

11. Regarding diphtheria toxin:

1. Toxin production is influenced by critical concentration of iron
2. Its mechanism of action is inhibition of protein synthesis .
3. All *Corynebacterium* species are toxigenic.
4. Phage is essential for toxin production.

Ans 1. ____ 2.____ 3.____ 4.____

Match Type **(4x2=8)**

12. Match the following Gram positive bacteria with their phenotypic tests:

1. *Staphylococcus saprophyticus*	A. Optochin sensitivity
2. *M. tuberculosis*	B. CAMP test
3. *Streptococcus agalactiae*	C. Oxidase positive
4. *Streptococcus pneumoniae*	D. Positive Niacin test
	E. Novobiocin resistance

Ans. 1.____ 2.____ 3.____ 4.____

13. Match the bacteria with the corresponding diseases

1. *Clostridium perfringens*	A. Q fever
2. *Coxiella burnetii*	B. Undulant fever
3. *Leptospira interrogans*	C. Food poisoning
4. *Brucella melitensis*	D. Weils disease
	E. Trench fever

Ans. 1.____ 2.____ 3.____ 4.____

14. Match the components of innate immunity with their function-

1. NK cell	A. Antigen presentation
2. α-1 glycoprotein	B. Binds pathogen associated molecular pattern
3. Dendritic cell	C. Phagocytosis
4. Toll-like receptors	D. Kills tumour cells
	E. Acute phase protein

Ans. 1.____ 2.____ 3.____ 4.____

15. Match the stains used for demonstration of the respective bacteria:

1. Albert's stain	A. *Treponema pallidum*
2. Negative stain	B. *Corynebacterium diphtheriae*
3. Modified acid fast stain	C. *Streptococcus pneumoniae*
4. Silver impregnation stain	D. *Mycobacterium leprae*

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

(2x1=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

a) Weil-Felix reaction is an useful serological test in Rickettsia infections
b) The basis of Weil-Felix reaction is sharing of antigens between Rickettsia and Proteus

Ans. _____

17. Regarding Tuberculine test:

a) It is based on the principle of delayed type hypersensitivity.
b) Positive tuberculine test indicates recent tuberculosis or BCG vaccination.

Ans. _____

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

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2017

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. Enumerate the cestodes causing diseases in humans. Discuss the structure of a hydadid cyst and the laboratory diagnosis of hydadid disease in man.

(2+4+4=10)

Q2. Enumerate the viruses causing hepatitis and their modes of transmission. Describe the serological markers of Hepatitis B virus infection.

(2+2+6=10)

Section – B

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

(a) *Cryptococcus neoformans*

(b) Pernicious malaria

(c) Dermatophytes

(d) Laboratory diagnosis of dengue viral infection

(e) Mycetoma

(f) Laboratory diagnosis of lymphatic filariasis

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(26)

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2017

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. **Following viruses can be transmitted from mother to fetus, except**

   a. Human cytomegalovirus
   b. Rubella virus
   c. Zika
   d. Human papilloma virus

2. **All are Dimorphic fungi, except**

   a. *Pneumocystis jirovecci*
   b. *Penicillium marneffei*
   c. *Histoplasma capsulatum*
   d. *Blastomyces dermatitidis*

3. **The sclerotic bodies are useful for diagnosis of**

   a. Sporotrichosis
   b. Mycetoma
   c. Chromoblastomycosis
   d. Rhinosporidiosis

4. **Larval form of *Taenia solium* is seen in:**

   a. Pig
   b. Cattle
   c. Dog
   d. Cat

5. **Koplik's spots are charcterstic of :**

   a. Mumps
   b. Measles
   c. Herpes
   d. Rubella

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(1x2=2

10. Reg

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 rabies viruses:

1. **Virion is bullet** shaped, 75 nm in diameter x 180 nm in length.
2. There is a single serotype of rabies virus.
3. All warm-blooded animals, including humans, can be infected.
4. The rabies virus isolated from natural human or animal infection is termed the fixed viruses

Ans. _____

7. Regarding Japanese encephalitis, which of the following statement/statements is/are correct?

1. CSF is the main sample for diagnosis
2. Isolation of virus can be done in mosquito cell line
3. IgM antibody detection from CSF confirms the diagnosis
4. Anopheles is the main vector

Ans. _____

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

8. Regarding *Pneumocystis jirovecci*

1. Is now classified as protozoa.
2. Causes esophagitis 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._____

9. Regarding histoplasmosis

1. Histoplasmosis is an intracellular infection of the reticuloendothelial system
2. It is not acquired by inhalation
3. Some infected persons develop pulmonary disease which resembles tuberculosis.
4. Is caused by dimorphic fungus *Histoplasma capsulatum*.

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

10. Regarding *Giardia lamblia*

1. It lives in the duodenum and upper jejunum
2. G. *lamblia* is an intestinal flagellate
3. It passes its life cycle in two hosts
4. Mature cyst is the infective form of the parasite.

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

11. Regarding diagnosis of viral infections

1. Samples for virus isolation should be transported in ice.
2. Swabs should be transported in viral transport media
3. Viral load is important to monitor the treatment response
4. Nasopharyngeal aspirate is the preferred sample in respiratory viral infections

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

(2x4=8)

Match Type

12. Match the following vectors with the parasites they transmit

1. *Leishmania donovani*	**a.** Culex mosquito
2. *Plasmodium falciparum*	**b.** Anopheles mosquito
3. *Wuchereria bancrofti*	**c.** *Phlebotomous argentipus*
4. *Babesia microti*	**d.** Trombiculid mite
	e. Ixodid ticks

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

13. Match the fungi with morphological classification

1.*Cryptococcus neoformans*	A- Yeast like fungi
2. *Candida albicans*	B- Yeasts
3. Aspergillus	C- Dimorphic fungi
4. Histoplasma capsulatum	D- Filamentous fungi
	E. Mite

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

14. Match the clinical presentations to the corresponding parasites

1. Iron deficiency anaemia	A. *Acanthaemeba*
2. Auto infection	B. *Enterobius vermicularis*
3. Portal hypertension	C. *Ancylostoma duodenale*
4. Keratitis	D. *Schistosoma japonicum*
	E. *Trichinella spiralis*

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

15. Match the parasites to their portal of entry

1. *Entamoeba histolytica*	A- Skin
2. *Trichomonas vaginalis*	B-Mouth
3. *Ankylostoma duodenale*	C-Blood sucking insect
4. *Wuchereria bancrofti*	D-Sexual contact

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 *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. *Regarding* acid fastness of *Mycobacterium tuberculosis*

Assertion: *Mycobacterium tuberculosis* is acid fast with Ziehl- Neelson stain

Reason : Acid fastness has been ascribed variously to the presence in the bacillus of mycolic acid.

Ans. _____

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

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2017

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 organisms causing enteric fever. Discuss the laboratory diagnosis and prophylaxis of enteric fever.

(1+7+2=10)

Q2. Define disinfectants. Enumerate the various categories of disinfectants, giving a commonly used example of each. Specify which disinfectants(s) is/are effective against (a) bacterial spores, and (b) viruses. **(2+4+2+2=10)**

Section – B

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

(a) Type IV hypersensitivity

(b) Laboratory diagnosis of urinary tract infection

(c) Macrophages

(d) Standard tests for Syphilis

(e) MRSA

(f) IgA

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All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Final Examination 2017

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. The grouping of haemolytic streptococci is based on the following :

a. Carbohydrate (C) antigen

b. M Protein antigen

c. T protein antigen

d. Streptolysin O

2. *Staphylococcus aureus* toxic shock syndrome toxin -1 (TSSTS-1)

a. can cause 'flesh-eating' necrotizing fasciitis

b. acts like a super-antigen for T lymphocytes

c. acts only locally, on the mucosa

d. is produced by strains belonging to phage group III

3. The following are based on agglutination reactions EXCEPT:

a. Widal test

b. Weil-Felix test

c. Kaufmann-White classification of *Salmonella*

d. VDRL test

4. The term "Vaccine" was coined by

a. Edward Jenner

b. Louis Pasteur

c. Karl Landsteiner

d. Frank Burnet

5. C1 component of compliment is synthesized in

a. Liver

b. Spleen

c. Intestinal epithelium

d. Macrophages

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 exotoxin of *Corynebacterium diphtheriae*:

1. inhibits protein synthesis
2. is encoded by the bacterial chromosome
3. is not produced by all strains of the bacterium
4. causes only local necrosis in guinea pigs if injected subcutaneously

Ans. _____

7. Which are the characteristic features of *Mycobacterium tuberculosis*

1. It is an obligate aerobe.
2. It is not alcohol fast.
3. Pyrazinamidase test is positive.
4. Nitrate reduction test is negative.

Ans. _____

(2x4=8)

True False Type **(Write 'T' for True & 'F' for False)**

8. The following disease(s) can be transmitted by ticks:

1. Endemic typhus
2. Endemic relapsing fever
3. Spotted fever
4. Scrub typhus

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

9. Regarding *Chlamydia trachomatis*

1. Serotype D-K causes inclusion conjunctivitis.
2. Seotype A,B and C causes Lymphogranuloma venereum
3. Serotype L1,L2 and L3 causes blinding trachoma.
4. It can cause infant pneumonia.

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

10. Regarding transmission of genetic material between bacteria

1. Transformation is a process through plasmid.
2. Insertion sequence can transfer antibiotic resistant genes.
3. Transfer factor F contains genes for self-transfer
4. Genetic material transfer through bacteriophage is called conjugation.

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

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11. Regarding acute pyogenic meningitis

1. It may be a sequel of otitis media due to *Streptococcus pneumoniae*
2. A latex agglutination test can be used for rapid diagnosis by detection of antigens of the common aetiological agents in cerebrospinal fluid (CSF)
3. The CSF has increased glucose and decreased proteins
4. A capsular polysaccharide vaccine is available for prevention of *Neisseria meningitides* infection

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

(2x4=8)

Match Type

12. Match the following Gram positive bacteria with the tests used for their phenotypic characterization:

1. *Corynebacterium diphtheriae*	A. Bacitracin sensitivity
2. *Mycobacterium tuberculosis*	B. Bile solubility
3. *Streptococcus pneumoniae*	C. CAMP test
4. Group A streptococci	D. Elek's gel precipitation
	E. Niacin test and nitrate reduction test

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

13. Match the following bacteria with the appropriate findings in direct staining/tests

1. *Gardenerella vaginalis*	A. Weakly acid-fast branching filaments
2. *Nocardia*	B. Clue cells
3. *Klebsiella granulomatis*	C. Detection of urease in breath
4. *Helicobacter pylori*	D. "Safety pin" coccobacilli

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

14. Match the following with appropriate features

1. *Yersinia pestis*	A. Sea gull appearance
2. *Bordetella pertussis*	B. Safety pin appearance
3. *Mycobacterium leprae*	C. Fried egg appearance
4. *Mycoplasma*	D. Thumb print appearance
	E. Cigar bundle appearance

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

15. Match the following diseases with causative organism

1. Granuloma inguinale	A. *Burkholderia pseudomallei*
2. Waterhouse-Friderichsen syndrome	B. *Coxiella burnetti*
3. Q fever	C. *Klebsiella granulomatis*
4. Melioidosis	D. *Neisseria meningitidis*
	E. Burkholderia mallei

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

(1x2=2

Time:

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 – Pus in *Pseudomonas aeruginosa* infection is blue coloured.
Reason – *Pseudomonas aeruginosa* produces pigment pyocyanin.

Ans. _____

17. Regarding capsular polysaccharide vaccines:

Assertion - Protein-conjugated polysaccharides are preferred as vaccines rather than capsular polysaccharides alone

Reason - Capsular polysaccharides cannot elicit any immune response by themselves, in the absence of protein antigens

Ans. _____

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

21

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS (Supplementary) 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. Describe the morphology of HIV. Mention the modes of transmission and give an account of laboratory diagnosis of HIV infection. **(2+1+7=10)**

Q2. Enumerate the fungi causing opportunistic mycosis. Discuss the pathogenicity and laboratory diagnosis of candida infection. **(2+3+5=10)**

Section – B

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

(a) Free living amoeba

(b) Interferon

(c) Antirabies Vaccine

(d) Microfilariae

(e) Life cycle of *Plasmodium Vivax*

(f) Morphological classification of fungi with examples

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All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS (Supplementary) Examination 2016

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. **Which of the following site of embryonated hen's egg is used for growing influenza virus for vaccine production?**
   a. Chorioamniotic membrane
   b. Allantoic cavity
   c. Amniotic cavity
   d. Yolk sac

2. **Which one of the following is an Oncogenic virus :**
   a. Herpes simplex virus 1
   b. Herpes simplex virus 2
   c. Human Papilloma Virus
   d. Varicella Zoster virus

3. **Following is an example of zygomycosis :**
   a. Cryptococcosis
   b. Aspergillosis
   c. Histoplasmosis
   d. Mucormycosis

4. **All of the following are DNA viruses except :**
   a. Herpes virus
   b. Pox virus
   c. Hepadna virus
   d. Rhabdo virus

5. **Organism that resembles *Plasmodium falciparum* morphologically is :**

a. Isospora

b. Cryptosporidia

c. Babesia

d. Cyclospora

(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. **Following are true about dermatophytes:**

1. They are moulds
2. Only infect subcutaneous tissue
3. Epidermophyton floccosum is a dermatophyte
4. They can be cultured on Sabourauds dextrose agar

Ans. _____

7. **The following is/are true regarding plasmodium infection**

1. Multiple ring form can be seen in Plasmodium falciparum infection
2. RBC size is usually enlarged in plasmodium vivax
3. Crescentic gametocyte is a feature of P.falciparum
4. Relapse often occurs in falciparum malaria

Ans. _____

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

8. **The following statement/s about *Ascaris lumbricoides***

1. Eggs are barrel shaped with mucous plugs at each pole.
2. Can lead to intestinal obstruction in severe infection
3. Embryonated egg is the infective stage.
4. Egg is bile stained.

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

9. **Regarding *Arbo viruses***

1. Transmitted by arthropod vectors.
2. The vector for Kyasanur forest disease is Aedes mosquito.
3. Chikungunya virus causes encephalitis.
4. Dengue,Chikungunya & Japnese B encephalitis are highly endemic in India.

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

10. **Regarding rhinosporidiosis:**

1. A chronic granulomatous disease characterized by formation of friable polyps
2. Usually confined to nose, mouth or eye
3. Causative agent is *Rhinosporidium seeberi*
4. Can be cultured on Sabouraud's dextrose agar

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

11. **Regarding viral inclusion bodies:**

1. Negri bodies are intranuclear.
2. Bollinger bodies are seen in fowl pox.
3. Guarnieri bodies are seen in Vaccinia infected cells.
4. Cowdry type A inclusions are seen in Yellow fever.

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

(2x4=8)

Match Type

12. **Match the various diagnostic tests with the pathogens**

1. Sabin Feldman dye test	A. *Echinococcus granulosus*
2. Paul Bunnell test	B. Herpes simplex virus
3. Montenegro test	C. *Leishmania donovani*
4. Casoni's test	D. *Toxoplasma gondii*
	E. Ebstein Barr virus

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

13. **Match the following parasites with their most preferred habitat:**

1. Hydatid cyst	A. Dog intestine
2. Adult echinococcus granulosus	B. Striated muscle
3 Trichinella spiralis	C. Liver
4. Fasciola hepatica	D. Bile duct

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

14. **Match the following fungi with their phenotypic properties:**

1. *Mucor spp.*	A. Germ tube
2. *Candida albicans*	B. Club shaped macroconidia
3. *Epidermophytonfloocosum*	C. Non septate hyphae
4. *Blastomycesdermatitidis*	D. Tuberculate spores
	E.Single broad based budding

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

15. **Match the following parasites with their vector**

1. *Leishmania donovani*	A. Tse tse fly
2. *Trypanosoma brucei*	B. Reduvid bug
3. *Babesia microti*	C. *Phlebotomous argentipus*
4. Plasmodium falciparum	D. Ixodid ticks
	E. Anopheles mosquito

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 *Cryptococcus spp.*:**

a. **Assertion** - *Cryptococcus neoformans* often causes meningitis in AIDS cases.

b. **Reason** - Immunity to *Cryptococcus neoformans* is mostly cell mediated .

Ans. _____

17. a. **Assertion** - Poliovirus initially multiplies in the epithelial cells and lymphatic tissue of alimentary canal.

b. **Reason** - Poliovirus mostly affects anterior horns of spinal cord, causing spastic paralysis.

Ans. _____

*** The End ***

All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS (Supplementary) 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 hypersensitivity reactions with examples. Discuss mechanism and features of type 1 hypersensitivity reaction. **(4+6=10)**

Q2. Name the etiological agents of enteric fever. Write the Lab diagnosis of enteric fever. **(2+8=10)**

Section – B

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

(a) Bacterial flagella

(b) Antigenic structure of *Streptococcus pyogenes*

(c) Draw labelled diagrams of Gram positive and negative bacterial cell wall

(d) Conjugation

(e) Differences between Classical and Eltor vibrio cholera.

(f) Standard tests for Syphilis

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All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS (Supplementary) 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. **Vaccination induces:**
   a. Active natural immunity
   b. Passive natural immunity
   c. Active artificial immunity
   d. Passive artificial immunity

2. **Which of the following is used as a selective media for *Neisseria spp.***
   a. Thayer- martin medium
   b. Thiosulfate Citrate bile salts sucrose (TCBS)
   c. Potassium tellurite blood agar
   d. *Wilson Blair* Bismuth Sulphite Medium

3. **Lipopolysacharide is a component of cell wall of :**
   a. *Bacillus* anthracis
   b. *Corynebacterium diphtheria*
   c. *Pseudomonas aeruginosa*
   d. *Clostridium welchi*

4. **Which of the following is associated with cat scratch disease?**
   a. *Streptobacillus moniliformis*
   b. *Bartonella henselae*
   c. *Campylobacter lari*
   d. *Coxiella burnetii*

5. **The functional nature of *tetanus toxin* is**

a. Cytotoxin
b. Enterotoxin
c. Neurotoxin
d. Hemolysin

(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. **Regarding Spirochetes the following are true.**

1. Major disadvantage of VDRL test is biological false positive reaction.
2. A negative TPHA virtually excludes the diagnosis of syphilis.
3. Yaws & Pinta are known as non venereal syphilis .
4. VDRL & RPR test remain positive even after effective treatment

Ans. _____

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

1. Contains a long chain polysaccharide
2. Melts at 98°C
3. No nutritive value
4. Sets at 42°C

Ans. _____

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

8. **Regarding members of family *Enterobacteriaceae:***

1. They produce oxidase.
2. They ferment glucose with production of acid with or without gas.
3. All members are catalase negative.
4. Most of them are enteric pathogens with few exceptions.

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. Regarding vaccines:

1. Typphoral vaccine is a heat killed vaccine.__
2. BCG is a live attenuated bacterial vaccine.__ ____
3. Sabin polio vaccine imparts high herd immunity.__ ___
4. Killed vaccines are contraindicated during pregnancy

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

11. Regarding mycobacteria:

1. BCG is a live attenuated vaccine
2. Eugonic growth on LJ medium is a characteristic feature of Mycobacterium bovis
3. MDR-TB refers to simultaoneous resistance to INH and rifampicin
4. Humoral immunity plays a major role in the pathogenesis of tuberculosis

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

(2x4=8)

Match Type

12. Match the components of innate immunity with their function-

1. NK cell	A. Antigen presentation
2. C-reactive protein	B. Binds pathogen associated molecular pattern
3. Dendritic cell	C. Phagocytosis
4. Toll-like receptors	D. Kills virus infected cells
	E. Acute phase protein

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

13. Match the specific properties with their corresponding immunoglobulins

1. Protects the body fluids	A. IgM
2. Protects the mucosal surfaces	B. IgG
3. Protects the blood stream	C. IgE
4. Mediates reaginic hypersensitivity	D. IgA

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