

April-2001

[KD 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

(Revised Regulation)

Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Discuss the opportunistic fungal infections and their diagnosis. (25)
2. Discuss the lab steps in establishing the aetiology of Diarrhoeal diseases. (25)
3. Write short notes on : (5 × 10 = 50)
 - (a) Mycotic mycetoma.
 - (b) Radio immune assay.
 - (c) AIDS sampling in Hospital wards.
 - (d) Chlamydo spores.
 - (e) Mycotoxins.

November-2001

[KE 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch IV — Microbiology

Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL the questions.

1. Define the term "PANDEMIC". List out the diseases that caused pandemics and discuss the etiology, pathogenesis, laboratory diagnosis and preventive measures for any one of them. (25)
2. Discuss the etiology, pathogenesis and laboratory diagnosis of fungal infections of hair in man. (25)
3. Write briefly on : (5 × 10 = 50)
 - (a) Nucleic acid amplification technology.
 - (b) Mucormycosis.
 - (c) Fungal toxins.
 - (d) Pathogenic yeasts.
 - (e) Blood culture.

March-2002

[KG 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL the questions.

1. Discuss the etiology, pathogenesis and prevention of NOSOCOMIAL DIARRHOEA. Write notes on hospital antibiotic policy and its importance. (25)
2. Enumerate the dimorphic fungi you know. Describe the morphology, cultivation, pathogenesis and laboratory diagnosis of sporotrichosis in man. (25)
3. Write briefly on : (5 × 10 = 50)
 - (a) Milk borne diseases and their prevention.
 - (b) Antifungal drug susceptibility testing methods.
 - (c) Lipophilic fungi.
 - (d) Genetic engineering.
 - (e) Scope and limitations of immunological studies on TWINS.

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September-2002

[KH 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch IV — MICROBIOLOGY

Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Give an account of medically important candida with special reference to recent developments. (25)
 2. Discuss the rapid diagnostic methods in bacterial diseases. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Chromoblastomycosis
 - (b) Arthropodes of medical importance
 - (c) Universal precautions
 - (d) Sterilisation of operation theatre
 - (e) Uses of guinea pig in laboratory medicine.
-

[KJ 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch IV — Microbiology

**Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY**

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

M.C.Q. must be answered **SEPARATELY** on the
answer sheet provided as per the instructions on the
first page of M.C.Q. Booklet.

Answer **ALL** questions.

Draw suitable diagrams wherever necessary.

1. Discuss the methods for infectious waste
management in hospitals and laboratories. (15)

2. Discuss the etiology, pathogenesis and laboratory
diagnosis of mycotic mycetoma. (15)

3. Write short notes on :

(10 × 5 = 50)

(a) DNA vaccines.

(b) Probiotics.

(c) Typing methods for epidemiological
investigation.

(d) Antibiotics for multi resistant gram positive
infections.

(e) SARS.

(f) Mycotic keratitis.

(g) Zygomycosis.

(h) *Pseudallescheria boydii*.

(i) Perinatal transmission, diagnosis and
prevention of HIV infection.

(j) Antifungal agents and susceptibility testing.

[KK 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch IV — Microbiology

Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

A. Essay : (2 × 15 = 30)

(1) Discuss the laboratory diagnosis of infections caused by dermatophytes.

(2) Describe the laboratory diagnosis of urinary tract infection.

B. Write short notes on : (10 × 5 = 50)

(1) Laboratory diagnosis of pneumococcal pneumonia

(2) Food-borne botulism

- (3) Viral diarrhoeas
- (4) *Candida albicans*
- (5) Keratomycosis
- (6) Prevention of hospital acquired infection
- (7) Disc diffusion methods
- (8) Segregation of waste
- (9) Aspergillosis
- (10) Infection control policy.

[KL 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION,

(Revised Regulations)

Branch IV — Microbiology

**Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

(2 × 15 = 30)

(1) List all the fungal agents causing infection of Keratinized tissue in Man. Discuss the clinical manifestations and laboratory diagnosis of such infections.

(2) Discuss the establishment of quality control in microbiology.

II. Write short notes on :

(10 × 5 = 50)

(a) Dimorphic fungi.

(b) Probiotics.

(c) Perinatal transmission diagnosis and prevention of HIV.

(d) Antifungal agents and susceptibility testing.

(e) Interferons.

(f) R plasmids.

(g) Beta lactamases.

(h) Madura mycosis.

(i) SARS.

(j) Immunochromatographic tests.

[KM 121]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch IV — Microbiology

**Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY**

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay : (2 × 15 = 30)

(1) Describe the aetiological agents and laboratory diagnosis of a case of Urinary tract infection.

(2) Discuss in detail the molecular diagnostic methods used in clinical Microbiology.

II. Write short notes on : (10 × 5 = 50)

(a) Laboratory diagnosis of Dermatophytosis.

(b) Bacteriological examination of water.

(c) Milk borne diseases.

(d) Mycotic poisoning.

(e) Cryptococcosis.

(f) Sporotrichosis.

(g) Universal precautions.

(h) Immunisation schedule for children.

(i) Bioterrorism.

(j) Extended spectrum beta lactamases
(ESBLs).

[KO 121]

Sub. Code : 2018

II. Write Short notes on :

(10 × 5 = 50)

M.D. DEGREE EXAMINATION.

Branch IV – Microbiology

**Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

(2 × 15 = 30)

(1) Enumerate Dimorphic fungi. Discuss Histoplasmosis with special emphasis on epidemiology and work done in India.

(2) Discuss the principles and applications of polymerase chain reaction and its modification in the clinical laboratory.

- (a) Rhinosporidiasis**
- (b) Phage typing**
- (c) Maintenance of Stock cultures**
- (d) Standard Precautions**
- (e) Mycotic keratitis**
- (f) Prophylaxis of Hepatitis B infection**
- (g) Cryptococcosis**
- (h) Gene therapy**
- (i) Madura foot**
- (j) Significant Bacteruria.**

[KP 121]

Sub. Code : 2018

II. Short notes :

(6 × 5 = 30)

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

Paper IV — MYCOLOGY AND APPLIED MICROBIOLOGY

Time : Three hours Maximum : 100 marks

Theory : Two hours and forty minutes	Theory : 80 marks
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M.C.Q. : Twenty minutes **M.C.Q. : 20 marks**

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

1. Describe the morphology, cultivation, pathogenicity and laboratory diagnosis of Candidal infections in immunocompromised patients. (20)

2. Describe the procedure to carry out the minimum inhibitory concentration and minimum bactericidal concentration. (15)

3. Discuss the duties and functions of infection control team. (15)

(a) Food poisoning

(b) *Trichosporon beigeli*

(c) Sporotrichosis

(d) **Mycotoxins**

(e) Immunoblotting techniques in diagnostic microbiology.

(f) Continuous quality assessment in the laboratory.

[KQ 118]

Sub. Code : 2019

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

Paper IV — (Old/New/Revised Regulations)

MYCOLOGY AND APPLIED MICROBIOLOGY

(Candidates admitted from 1988-89 onwards)

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

1. Describe the aetiological agents and laboratory diagnosis of a case of urinary tract infection. (20)
2. Discuss the duties and functions of infection control team. (15)
3. Discuss about "BIO SAFETY" in microbiology laboratory. (15)

II. Short notes :

(6 × 5 = 30)

- (a) Mycotic keratitis.
 - (b) Mycetoma.
 - (c) Quality control in microbiology laboratory.
 - (d) Uses of mice in microbiology.
 - (e) Discuss the bacteriological examination of water.
 - (f) Bactec system.
-

[KQ 119]

Sub. Code : 2018

II. Short notes :

(6 × 5 = 30)

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

Paper IV — MYCOLOGY AND APPLIED
MICROBIOLOGY AND RECENT ADVANCES

(For candidates admitted from 2004–2005 onwards)

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

1. Describe the epidemiology, pathogenesis and laboratory diagnosis of penicilliosis marneffei. (20)
2. Describe the steps involved in the management of biomedical waste in a hospital. (15)
3. Discuss the application of nucleic acid based techniques in diagnostic microbiology. (15)

[KR 121]

Sub. Code : 2018

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

Paper IV — (Old/New/Revised Regulations)

**MYCOLOGY, APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

(Candidates admitted from 2004–05 onwards)

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay :

1. Describe the morphology, pathogenesis and lab diagnosis of systemic dimorphic fungi. (20)

2. Describe the steps in investigation of an outbreak of infectious disease in a hospital. (15)

3. Describe the principle of different types of Polymerase Chain Reaction (PCR) and their use in Clinical Microbiology. (15)

II. Short notes :

(6 × 5 = 30)

(a) Pathogenicity islands.

(b) Modern vaccines.

(c) Gnotobiotic animals.

(d) *Candida albicans*.

(e) Rapid diagnostic tests in Microbiology.

(f) Role of bacteriophages in Microbiology.

MARCH 2008

[KS 120]

Sub. Code : 2017

M.D. DEGREE EXAMINATION.

Branch IV — Microbiology

Paper IV — MYCOLOGY AND APPLIED MICROBIOLOGY

(Common to all candidates)

Q.P. Code : 202017

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Draw diagrams wherever necessary.

- I. Long Essay : (2 × 20 = 40)
1. Discuss Nucleic acid based analytic methods for Microbial identification and characterization.
 2. Discuss in detail the opportunistic fungal infections in AIDS with Laboratory diagnosis and Treatment.
- II. Write Short note on: (10 × 6 = 60)
1. Endemic Mycoses.
 2. Demateaceous Fungal Infections.
 3. Antifungal Susceptibility Testing.
 4. Lysis Centrifugation Technique.
 5. IV Catheter associated bacteremia and Techniques for Laboratory Diagnosis.
 6. DNA Chips (Micro Arrays).
 7. Hospital Infection Control programmes.
 8. Agents of Bioterrorism
 9. Susceptibility Profiles requiring further scrutiny and evaluation in clinical Laboratories.
 10. Vaccines for Adults.
-

March 2009

[KU 120]

Sub. Code: 2017

M.D. DEGREE EXAMINATION

Branch IV – MICROBIOLOGY

(Common to all candidates)

**Paper IV – MYCOLOGY AND APPLIED MICROBIOLOGY
AND RECENT ADVANCES**

Q.P. Code : 202017

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions :

(2 x 20 = 40)

1. Define quality assurance. Discuss in detail quality control programmes for clinical microbiology laboratory.
2. Discuss antifungal susceptibility testing methods for candida species with their merits and demerits.

II. Write short notes on :

(10 x 6 = 60)

1. Mycetoma.
2. DNA microarrays and its application.
3. Disc approximation 'D' test for staphylococci.
4. Histoplasmosis.
5. Fungal stains.
6. Surface mycoses.
7. Flow cytometry.
8. Immuno chromatography.
9. Amp 'C' – β lactamases in GNB.
10. Penicillium marneffii infection.

September 2009

[KV 120]

Sub. Code: 2017

M.D. DEGREE EXAMINATION

Branch IV – MICROBIOLOGY

(Common to all candidates)

**Paper IV – MYCOLOGY AND APPLIED MICROBIOLOGY
AND RECENT ADVANCES**

Q.P. Code : 202017

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions :

(2 x 20 = 40)

1. Discuss the recombinant genetic engineering techniques and its applications.
2. National Aids control organization policy of diagnosis of HIV infection. Add a note on HIV vaccines.

II. Write short notes on :

(10 x 6 = 60)

1. Gene cloning
2. Biological weapons
3. Typing methods in bacteria
4. Non gonococcal urethritis
5. Salmonella food poisoning
6. ESBL detection in the laboratory
7. Newer fluoroquinolones
8. Revised national tuberculosis control programme
9. Bacteriology of milk
10. Cytokines

March 2010

[KW 120]

Sub. Code: 2017

M.D. DEGREE EXAMINATION

Branch IV – MICROBIOLOGY

(Common to all candidates)

**Paper IV – MYCOLOGY AND APPLIED MICROBIOLOGY
AND RECENT ADVANCES**

Q.P. Code : 202017

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions : (2 x 20 = 40)

1. Discuss important cytokines and their selected biologic effects.
2. Laboratory aids in the selection of antimicrobial therapy.

II. Write short notes on : (10 x 6 = 60)

1. Prions.
2. B.O.D. incubator.
3. Superficial mycoses.
4. Exospore.
5. Fc Farland tubes.
6. Jumping genes.
7. Opportunistic parasitic infections in AIDS.
8. Antiviral vaccines for HIV/AIDS.
9. Bioterrorism.
10. Biomedical waste disposal

September 2010

[KX 120]

Sub. Code: 2017

M.D. DEGREE EXAMINATION

Branch IV – MICROBIOLOGY

**Paper IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

(Common to all candidates)

Q.P. Code : 202017

Time : Three hours

Maximum : 100 marks

**Draw suitable diagram wherever necessary.
Answer ALL questions.**

I. Essay questions : (2 X 20 = 40)

1. Discuss in detail about Antibiotic sensitivity testing.
2. Describe the Antigenic variations in orthomyxoviruses and their epidemiological importance.

II. Write short notes on : (10 X 6 = 60)

1. Morphological classification of fungi.
2. Mycotoxins.
3. Automation in Microbiology.
4. Opportunistic fungi.
5. Blood culture.
6. Specimen collection in mycetoma.
7. Bird Flu.
8. Pigment producing fungi.
9. Biomedical waste disposal.
10. Superficial mycosis.

MAY 2011

[KY 120]

Sub. Code: 2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY
MYCOLOGY AND APPLIED MICROBIOLOGY AND RECENT ADVANCES**

Q.P. Code : 202017

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

	Pages (Max.)	Time (Max.)	Marks (Max.)
I. Essay:			
1. Define Dimorphic fungi. Enumerate them. Describe the morphology, pathogenesis and lab diagnosis of Histoplasmosis causative organism.	6	15	10
2. List the Zoonotic diseases. Name the prevalent bacterial zoonotic diseases in India. Describe the morphology, cultural characteristics antigenic structure and lab diagnosis of Brucellosis.	6	15	10
II. Short Questions:			
1. Dermatophytes.	3	8	5
2. Madura mycosis.	3	8	5
3. Mycetism and Mycotoxicosis.	3	8	5
4. Universal immunization programme.	3	8	5
5. Prevention of hospital acquired infection.	3	8	5
6. Microbial pathogenicity.	3	8	5
7. Recent advances in detection of M.tuberculosis.	3	8	5
8. Recent immunological methods available for detection of antigen.	3	8	5
III. Reasoning Out:			
1. Biomedical waste management is mandatory in all hospitals, labs and healthcare delivery places.	4	10	5
2. Phage typing is used in epidemiological typing.	4	10	5
3 Though one or two doses of OPV has produced 90-100% seroconversion in advanced countries but not so in developing countries in the tropics.	4	10	5
4. Flow cytometry is technologically sophisticated approach than immuno fluorescence.	4	10	5
IV. Very Short Answers :			
1. Types of fungal spores.	1	4	2
2. Post exposure prophylaxis of HIV.	1	4	2
3. Types of PCR.	1	4	2
4. Standards to be maintained in the levels of airborne bacteria level in hospital air.	1	4	2
5. Latent infection.	1	4	2
6. HIV protein types blotted on Nitrocellulose paper.	1	4	2
7. Cold agglutination test.	1	4	2
8. Biological false positive reactions.	1	4	2
9. Weakly acid fast organisms.	1	4	2
10. Thioglycollate medium.	1	4	2

APRIL 2012

[LA 120]

Sub. Code: 2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY
MYCOLOGY AND APPLIED MICROBIOLOGY AND RECENT ADVANCES
Q.P. Code : 202017**

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

	Pages (Max.)	Time (Max.)	Marks (Max.)
I. Essay:			
1. Enumerate the causative agents of mycetoma foot. Describe the pathogenesis and laboratory diagnosis of Eumycotic mycetoma.	9	15	10
2. What are Hospital acquired Infections? Write in detail about laboratory diagnosis and control of hospital acquired infections.	9	15	10
II. Short Questions:			
1. List Mycotoxins and discuss the pathogenesis of any one mycotoxin.	3	8	5
2. Discuss the causative agent and pathogenic lesion due to Lobomycoses.	3	8	5
3. Describe the causative agent and laboratory diagnosis of Piedra.	3	8	5
4. Discuss the composition and uses of Sabourauds Dextrose Agar.	3	8	5
5. Enumerate the Normal flora of skin and its benefits.	3	8	5
6. Describe the principle and procedure of Disk Diffusion method to study antibiotic sensitivity pattern.	3	8	5
7. List Recombinant vaccines, describe the production of recombinant Hepatitis B Vaccine.	3	8	5
8. What is Bio-film? What are the methods to detect it in vitro?	3	8	5
III. Reasoning Out:			
1. Demonstration of Fungus in nails is difficult and is possible only after using 10% Potassium hydroxide. Explain.	5	10	5
2. In Mycetoma foot why the sinuses discharge granules.	5	10	5
3. Explain why Diphtheria and tetanus toxoids are given with Bordetella pertussis vaccine.	5	10	5
4. More than 10^5 CFU/ml denotes significant bacteriuria. Explain.	5	10	5
IV. Very Short Answers :			
1. Give two examples for anthropophilic fungus.	1	4	2
2. Name the causative agent of white piedra.	1	4	2
3. List four fungus causing Systemic mycoses.	1	4	2
4. Draw the macroconidia of Histoplasma capsulatum.	1	4	2
5. Name four pathogenic species of Candida.	1	4	2
6. Give the CFU/ml corresponding to 0.5 Mc Farland standard.	1	4	2
7. List two examples for passive immunization.	1	4	2
8. Enumerate two characters of endotoxins.	1	4	2
9. Name two methods used for Air sampling.	1	4	2
10. Name the gene responsible for methicillin resistance in MRSA.	1	4	2

(LC 120)

APRIL 2013

Sub. Code: 2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY
PAPER – IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES
Q.P. Code : 202017**

Time: Three Hours

Maximum: 100 marks

I. Essay: (2X10=20)

1. Discuss in detail the principle, steps, types, merits and demerits of polymerase chain reactions.
2. Classify superficial mycoses. Discuss in detail on Dermatophytosis.

II. Short Questions: (8X5=40)

1. Pneumocystis jirovecii
2. Aflatoxins
3. Bebesiosis
4. Human cysticercosis
5. H1N1 Influenza
6. Helicobacter pylori
7. Super antigens
8. Bacteriocins

III. Reasoning Out: (4X5=20)

1. Negative Weil Felix test never rules out Rickettsial diseases completely.
2. Infectivity is maximum during the initial stages of Chickenpox.
3. Brucellosis exhibits chronicity and there is a tendency for relapse even after adequate antimicrobial therapy.
4. Amoxycillin should be avoided in the treatment of Infectious Mononucleosis.

IV. Very Short Answers: (10X2=20)

1. Chick Martin test
2. Exaltation
3. Agar agar
4. Alastrim
5. Amboceptor
6. Job syndrome
7. Cold enrichment
8. Nude mice
9. Ascolis thermoprecipitin test
10. Torres bodies

[LD 120]

OCTOBER 2013

Sub. Code: 2017

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

MYCOLOGY AND APPLIED MICROBIOLOGY AND RECENT ADVANCES

Q.P. Code : 202017

Time: Three Hours

Maximum: 100 marks

I. Essay:

(2 x 10 = 20)

1. Discuss automated methods employed in diagnosis of tuberculosis.
2. Define opportunistic fungal infections. Enumerate common predisposing factors. Outline laboratory diagnosis of these agents.

II. Short Questions:

(8 x 5 = 40)

1. What is microarray? Describe its principle and applications in microbiology.
2. What are mycotoxins? Discuss mycotoxicosis.
3. Classify antifungal agents. Discuss the methods of anti-fungal susceptibility testing.
4. Role of microbiologist in Hospital Infection Control Committee.
5. Dermatophytes.
6. What are edible vaccines? Discuss the current status and future of edible vaccines.
7. Epidemiology and lab diagnosis of *Penicillium marneffei*.
8. Nosocomial infections.

III. Reasoning Out:

(4 x 5 = 20)

1. *Cryptococcus neoformans* forms brown colonies on bird seed agar.
2. Uni-directional workflow is must in molecular laboratories.
3. Pertussis causes are increasing in adolescents and young adults.
4. Biomedical waste management is mandatory in all hospitals.

IV. Very Short Answers:

(10 x 2 = 20)

1. Post exposure prophylaxis after needle stick injury.
2. Real time PCR.
3. Madura foot.
4. Microscopy in fungal infections.
5. Virus like particles.
6. Immunomodulators.
7. Blotting techniques.
8. Biofilms.
9. Competitive ELISA.
10. Dimorphic fungi.

(LE 120)

APRIL 2014

Sub. Code:2017

**M.D. DEGREE EXAMINATION
BRANCH IV - MICROBIOLOGY**

**PAPER – IV - MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 marks

I. Essay Questions:

(2X10=20)

1. Discuss the causative agents, pathogenesis and laboratory diagnosis of Rhino cerebral mucormycosis.
2. Discuss the mechanism of action of Antibiotics acting on bacterial cell wall and development of drug resistance.

II. Short Questions:

(8X5=40)

1. Chromoblastomycosis.
2. Rhinosporidiosis
3. Oral thrush.
4. Sabourauds dextrose agar.
5. Mycotoxicosis.
6. Kirby Bauer disk diffusion method.
7. Differential coliform test.
8. Milk borne diseases.

III. Reasoning Out:

(4X5=20)

1. Histoplasma capsulatum appears as rounded form in host tissues and filamentous form in culture.
2. Pneumocystis jirovecii is a fungus and not a protozoon.
3. Mid stream urine sample is appropriate for bacterial culture.
4. Skin scrapings are examined after treatment with 10% Potassium hydroxide.

IV. Very Short Answers:

(10X2=20)

1. Penicillium marneffeii.
2. Aspergilloma.
3. Black piedra.
4. Mycetism.
5. Lobomycosis.
6. Echinocandins.
7. Adjuvant.
8. Injectable vaccine for Typhoid.
9. Ribotyping.
10. Transposons.

(LF 120)

OCTOBER 2014

Sub. Code:2017

M.D. DEGREE EXAMINATION

BRANCH IV - MICROBIOLOGY

**PAPER IV - MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 marks

I. Essay Questions:

(2 x 10 = 20)

1. Define the term pandemic. List out the diseases that caused pandemic and discuss in detail morphology, etiology, pathogenesis, lab diagnosis and preventive measures of severe acute respiratory syndrome.
2. Describe the morphology, cultivation, pathogenesis and lab diagnosis of Candidal infection. Add a note on recent trends in the lab diagnosis of fungal infection.

II. Short Questions:

(8 x 5 = 40)

1. Spores in fungi.
2. Mycotoxicosis.
3. Pseudallescheria boydii.
4. Etiological agents and lab diagnosis of keratomycosis.
5. Phaeoid fungi.
6. Sterilisation of operation theatres.
7. Beta – lactamases.
8. Tests in the examination of milk.

III. Reasoning Out:

(4 x 5 = 20)

1. Another important emerging bacterial infection is Clostridium difficile.
2. Diagnosis of Penicillium marneffei infection is easy when typical skin lesions appear.
3. Normal microbial flora play an important role in the body.
4. Standard suspension of insoluble barium sulphate precipitates have been described by Mc Farland.

IV. Very Short Answers:

(10 x 2 = 20)

1. Fungal wet mount.
2. Name the various skin tests and fungal antigens used.
3. Ectothrix infection.
4. Hair perforation test.
5. Common causative agents of Eumycetoma with characters of grains.
6. Bio typing.
7. Define density gradient centrifugation and mention the methods.
8. Good buffers.
9. Redox indicators.
10. Radio allergosorbent test.

[LG 120]

APRIL 2015

Sub. Code: 2017

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY
AND RECENT ADVANCES**

Q.P. Code : 202017

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essay:

(2 x 10 = 20)

1. Enumerate and define Dimorphic Fungi. Describe the morphology, pathogenesis, laboratory diagnosis of *Coccidioides immitis*.
2. Describe the emerging and re-emerging infections in India.

II. Short Questions:

(8 x 5 = 40)

1. Revised National Tuberculosis Control Programme.
2. ESBL detection.
3. B.O.D. incubator.
4. *Sporothrix schenckii*.
5. Bacteriology of water.
6. Ventilator associated Pneumonia.
7. Incineration.
8. Recombinant vaccines.

III. Reasoning Out:

(4 x 5 = 20)

1. Warming of 10% KOH helps in the identification of fungi.
2. Hepatitis B infection is more infectious than HIV infection.
3. Stokes method of antibiogram is better than Kirby – Bauer disc diffusion method.
4. Cerebrospinal fluid should not be refrigerated before processing the sample for culture.

IV. Very Short Answers:

(10 x 2 = 20)

1. Swine flu vaccine.
2. Sclerotic bodies.
3. Hair perforation test.
4. Name four antifungal agents in azole group.
5. Causative agents of *Tinea corporis*.
6. General characteristic of macroconidia in dermatophytes.
7. Zoophilic fungi.
8. Biological false positive reaction
9. Anamnestic reaction.
10. Types of fungal spores.

(LI 120)

APRIL 2016

Sub. Code:2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY
PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay Questions:

(2 x 10 = 20)

1. What is biomedical waste? Write in detail about the disposal of biomedical waste with special reference to terminal disposal.
2. Describe culture media used for the isolations and identification of fungus. Add note on preservation of fungus.

II. Short Questions:

(8 x 5 = 40)

1. Personal protective equipments (PPE).
2. Id reaction.
3. Role of MALDI – TOF in diagnostic microbiology.
4. Uses of mice in microbiological experiment.
5. Fungal vaccines.
6. Describe the method of extraction of Nucleic acid from bacterial culture.
7. What is Ectothrix and importance of Adamson Fringe?
8. Vaccine delivery system.

III. Reasoning Out:

(4 x 5 = 20)

1. Why Brucella is used commonly in bioterrorism?
2. Explain how phenotypic switching act as a virulence factor in candida?
3. Emerging new infection is nowadays common in many places. Discuss the reasons for it.
4. Why Dixon agar medium is useful in the isolation of Malassezia species? Add a note on modified Dixon agar.

IV. Very Short Answers:

(10 x 2 = 20)

1. Transcription mediated amplification (TMA).
2. Give reasons for grouping of prototheca under atypical fungi.
3. Transient bacteremia.
4. Scytalidium fungus.
5. What is standard precautions in infection control program?
6. Tetrazolium reduction medium.
7. Deuteromycetes.
8. What is asymmetric PCR?
9. Nude Mice.
10. Mention two uses of quality control in a clinical laboratory.

(LJ 120)

OCTOBER 2016

Sub. Code:2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY**

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay Questions:

(2 x 10 = 20)

1. Classify medically important fungi and write in detail the laboratory diagnosis of fungi.
2. Discuss in detail the principle, methodology, merits and demerits of RT – PCR.

II. Short Questions:

(8 x 5 = 40)

1. Gene cloning.
2. Opportunistic parasitic infections in AIDS.
3. Cryptococcus neoformans.
4. Microbiome.
5. Bacteriology of Air.
6. Line probe assay.
7. Bacterial food poisoning.
8. Hydroclave.

III. Reasoning Out:

(4 x 5 = 20)

1. Laboratory workers are cautioned not to open fluffy white molds unless they are placed inside a biological safety cabinet.
2. Biomedical waste management is mandatory in health care settings.
3. Formaldehyde gas used in theatre sterilization is to be neutralized with ammonia.
4. Sterile solutions containing endotoxins can cause serious illness.

IV. Very Short Answers:

(10 x 2 = 20)

1. McFarland standard.
2. Pentavalent vaccine.
3. Gnotobiotic animal.
4. Causative agent of white piedra.
5. Air sampling methods.
6. Chlamydospore.
7. Endothrix.
8. Paradoxical carrier.
9. Skirrow's medium.
10. Shell viral assay.

(LK 120)

MAY 2017

Sub. Code:2017

M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY
PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay Questions:

(2 x 10 = 20)

1. Define Nosocomial infections. Write in detail about Hospital infection control.
2. Enumerate the causative agents of Mycetoma. Describe the pathogenesis and laboratory diagnosis of Eumycotic mycetoma.

II. Short Questions:

(8 x 5 = 40)

1. Bioterrorism.
2. Laboratory diagnosis of Dermatophytes.
3. Rhinosporidium.
4. Antifungal susceptibility.
5. Bacteriology of milk.
6. National immunization schedule.
7. Blood stream infections.
8. Botulism.

III. Reasoning Out:

(4 x 5 = 20)

1. Cryptococcus neoformans is seen as black colonies on Bird seed agar.
2. Phage typing is used in epidemiological typing.
3. Superbugs are a great concern in health care system.
4. Subculture of Streptococcus pneumonia culture is difficult.

IV. Very Short Answers:

(10 x 2 = 20)

1. MMR vaccine.
2. Reynolds Braude phenomenon.
3. Nude mice.
4. Automated blood culture system.
5. Aflatoxin.
6. Ectothrix.
7. Causative agents of phaeohyphomycosis.
8. Asteroid bodies.
9. Thioglycollate medium.
10. Sabin vaccine.

M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY
PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay Questions:

(2 x 10 = 20)

1. Discuss etiology, pathogenesis and prevention of Nosocomial diarrhoea. Write notes on hospital antibiotic policy and its importance.
2. Define Dimorphic fungi. Enumerate them. Describe the morphology, pathogenesis and lab diagnosis of Histoplasma capsulatum.

II. Short Questions:

(8 x 5 = 40)

1. Mycotic Mycetoma.
2. Antifungal drug susceptibility testing methods.
3. Fungal stains.
4. Lab diagnosis of Dermatophytosis.
5. Milk borne diseases and their prevention.
6. Recent immunological methods available for detection of antibodies.
7. Vancomycin resistant Enterococcus.
8. Botulism.

III. Reasoning Out:

(4 x 5 = 20)

1. The development of D- Arabinitol as a diagnostic marker for invasive candida infection.
2. Gold standard of diagnosis of Penicillium marneffeii is a positive culture from appropriate clinical specimens.
3. Ultimate source of common pathogenic organism is dust derived from human organism.
4. Adhesion is the first and perhaps most crucial step in infection.

IV. Very Short Answers:

(10 x 2 = 20)

1. Cold agglutination test.
2. HIV protein types blotted on nitrocellulose paper.
3. Sclerotic bodies.
4. Fungal agents of keratomycosis.
5. PH meter.
6. Define white piedra and mention the causative agents.
7. Recent advances in the diagnosis of Dengue.
8. Biological false positive reaction.
9. Mention the important mycotoxins and the fungi producing them.
10. Hair Bait Technique.

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P.Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. What is endemic mycosis? Mention the fungal agent of endemic mycosis. Write in detail about Subcutaneous Dimorphic fungal infection.
2. Enumerate Lab acquired infections. Classify biological agents based on biohazard category. Discuss various biosafety measure in laboratory.

II. Short notes: (10 x 5 = 50)

1. Indicator medium used for Fungal culture.
2. Virulence factors for Cryptococcus.
3. Fungal mycetoma.
4. Invasive Fungal staining.
5. Compare Mycotoxins and Mycetismus.
6. Flowcytometry.
7. Traveller's Diarrhoea.
8. Typing methods of Bacterial diagnosis.
9. Kirby-Bauer method.
10. Pathogenicity islands.

III. Reasoning Out: (4 x 5 = 20)

1. Fungal culture medium is not suitable in cultivation of Rhinosporidium seeberi from clinical samples.
2. Chlamydospore production in Candida species not demonstrable in Sabouard's Dextrose agar.
3. How do clinical Microbiologist determine which test and services to offer for any given specimen?
4. Biosafety level are determined based on pathogens.

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Define the term 'PANDEMIC'. List out the diseases that caused pandemics and discuss the etiology, pathogenesis, laboratory diagnosis and the preventive measures for any one of them.
2. Describe the various laboratory methods for the diagnosis of fungal infections. Add a special note on anti fungal susceptibility testing.

II. Short notes: (10 x 5 = 50)

1. Flow cytometry.
2. R plasmids.
3. Fungal stains.
4. Erythema concentricum.
5. Chlamydospore.
6. Define piedra. Classify piedra, morphology, pathogenesis, lab diagnosis, treatment and prophylaxis of piedra.
7. Presumptive coliform test.
8. Carbohydrate assimilation test.
9. Biofilm.
10. BACTEC system.

III. Reasoning Out: (4 x 5 = 20)

1. Pneumocystis jirovecii is a fungi, not a protozoan.
2. What is the role restriction endonucleases in molecular genetics?
3. Mucormycosis is more common in diabetic patients.
4. CRP is raised in inflammatory conditions.

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay:

(2 x 15 = 30)

1. Approach to international travel to African countries and North America on 2 years stay. Assess the risk factors and add a note on pre - travel immunization- routine and recommended vaccinations.
2. Describe in detail on the Re-emerging fungal infections and the challenges in the diagnosis and treatment of these fungal infections. Add a note on fungal vaccines.

II. Short notes:

(10 x 5 = 50)

1. Probiotics.
2. Sepsis markers.
3. Banana peel culture.
4. Fungal infection of respiratory tract.
5. Biosafety cabinet.
6. QC for ELISA test.
7. Rhinosporidium seeberii.
8. Prevention of CAUTI.
9. Problems in the diagnosis of Hepatitis B mutants.
10. HAART.

III. Reasoning Out:

(4 x 5 = 20)

1. Antibiotic coated bacteria tests are of value in diagnosis of UTI.
2. Role of Hypertonic xylose agar medium.
3. Utility of Mc Crady probability table.
4. Diagnostic dilemma in TB and HIV.

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay:

(2 x 15 = 30)

1. Mention the opportunistic fungal infection in AIDS. Discuss in detail about respiratory fungal infection.
2. Enumerate NABL standards. Write a brief essay on quality control in clinical microbiology.

II. Short notes:

(10 x 5 = 50)

1. Exoantigen test.
2. Mycotoxins.
3. Wood's lamp examination in Mycology.
4. Chromoblastomycosis.
5. European Blastomycosis.
6. Immunotherapy for Cancers.
7. Nude mice.
8. Subunit Bacterial vaccines.
9. Automated methods of TB diagnosis.
10. Recent guidelines of Bio-medical waste management.

III. Reasoning Out:

(4 x 5 = 20)

1. The clinical importance of serological dilutions in laboratory test results.
2. Hair perforation test is usually performed for Dermatophyte detection and classification.
3. *Coccidioides immitis* is a fungal infection usually not processed in primary laboratories.
4. Sterility testing standards are different in various Operation theatres.

[LQ 120]

**AUGUST 2020
(MAY 2020 SESSION)**

Sub. Code: 2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY**

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Define hospital acquired infections (HAI). Discuss in detail the microbiological approach to blood stream infections.
2. Enumerate the fungi causing opportunistic infections. Discuss in detail the pathogenesis, virulence factors and laboratory diagnosis of Cryptococcal meningitis.

II. Short notes: (10 x 5 = 50)

1. Bacteriology of water.
2. Phaeohyphomycosis.
3. IRIS.
4. Invasive Aspergillosis.
5. Ventilator associated pneumonia.
6. Pneumocystis jirovecii.
7. Carbohydrate assimilation test.
8. Effluent treatment plant.
9. Dermatophyte test medium.
10. Plasma pyrolysis.

III. Reasoning Out: (4 x 5 = 20)

1. Cycloheximide in Sabouraud dextrose agar.
2. Nitrofurantoin has no role in upper UTI.
3. Slide culture is preferred than adhesive tape in identification of fungi.
4. Lysis centrifugation is a preferred blood culture technique.

[LS 120]

**NOVEMBER 2020
(OCTOBER 2020 SESSION)**

Sub. Code: 2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY**

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. List out the Dimorphic fungi. Describe in detail the morphology, pathogenesis, clinical features and laboratory diagnosis of Histoplasma capsulatum.
2. Define PUO. Discuss in detail the etiology and laboratory approach in the diagnosis of Pyrexia of unknown origin.

II. Short notes: (10 x 5 = 50)

1. Candida auris.
2. NTEP.
3. Pseudallescheria boydii.
4. Azoles as antifungal agents.
5. Hospital acquired infections.
6. Geotrichum.
7. Mycotoxins.
8. RT-PCR for SARS-COV 2.
9. MALDI-TOF.
10. Personal protective equipment.

III. Reasoning Out: (4 x 5 = 20)

1. Niger seed agar is used in isolation of Cryptococcus neoformans.
2. CSF samples should never be refrigerated.
3. Lungs are the primary site in many fungal infections.
4. Clean catch mid stream urine is the ideal sample in cases with UTI.

[MD 0721]

JULY 2021
(MAY 2021 SESSION)
M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY

Sub. Code: 2017

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: **(2 x 15 = 30)**

1. Enumerate the common hospital acquired infections and the causative organisms. Discuss about diagnosis, control and prevention of hospital acquired infections.
2. Define dimorphic fungi. Enumerate them. Describe the morphology, pathogenesis and laboratory diagnosis of histoplasmosis.

II. Short notes: **(10 x 5 = 50)**

1. Antifungal susceptibility testing.
2. Chromoblastomycosis.
3. Fungal stains.
4. Onychomycosis.
5. Cryptococcus neoformans.
6. Agents of bioterrorism.
7. Microarray.
8. Vaccines for adults.
9. Amp C betalactamases.
10. Immunofluorescence.

III. Reasoning Out: **(4 x 5 = 20)**

1. Demonstration of fungi in nails is difficult and is possible only after using 10% Potassium hydroxide.
2. Cryptococcus neoformans forms brown colonies on bird seed agar.
3. Biomedical waste management is mandatory in all health care delivery places.
4. More than 10^5 CFU/ml in urine denotes significant bacteriuria.

[MD 1121]

**NOVEMBER 2021
(OCTOBER 2021 SESSION)
M.D. DEGREE EXAMINATION**

Sub. Code: 2017

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Discuss in detail the principles, steps, types, merits and demerits of Polymerase Chain Reaction.
2. Discuss the causative agents, pathogenesis and lab diagnosis of Rhino Cerebral Mucormycosis.

II. Short notes: (10 x 5 = 50)

1. Piedra.
2. Rhinosporidiosis.
3. Penicillium marneffi.
4. Sporothrix schneckii.
5. Malassezia furfur.
6. Biofilm.
7. Role of MALDI TOF in diagnostic microbiology.
8. Metallo beta lactamases.
9. D-Test for Staphylococcus.
10. Normal Flora of skin and its benefits.

III. Reasoning Out: (4 x 5 = 20)

1. Pneumocystis jirovecii is a fungus and not a protozoan.
2. Phenotypic switching acts as a virulence factor in Candida.
3. Uni directional workflow is a must in molecular laboratories.
4. Cerebrospinal fluid should not be refrigerated before processing the sample for culture.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 0522]

MAY 2022

Sub. Code: 2017

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY AND APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Enumerate the commonly encountered *Aspergillus* species. Write in detail about the disease spectrum and lab diagnosis of infections caused by them. Add a note on role of biomarkers in diagnosis and management of invasive aspergillosis.
2. Define the term outbreak. Write in detail the steps involved in the investigation and management of an outbreak.

II. Short notes: (10 x 5 = 50)

1. Automated blood culture systems.
2. Rapid molecular antimicrobial resistance detection.
3. Bioterrorism.
4. Rhinosporidiosis.
5. Antifungal susceptibility testing methods.
6. Pneumococcal vaccines.
7. Hospital infection control committee.
8. Keratomycosis.
9. Diagnostic stewardship.
10. Catheter related blood stream infections (CR-BSI).

III. Reasoning Out: (4 x 5 = 20)

1. Lyophilisation is a good method for maintaining stocks of bacterial isolates.
2. Fungal culture plates are routinely incubated at 25°C as well as 37°C.
3. Reporting the accurate species identification of *Candida* isolated from clinical specimen is crucial.
4. Semi quantitative method is employed for reporting urine cultures.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 1022]

OCTOBER 2022

Sub. Code: 2017

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY, APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Write in brief about the pathogenesis and laboratory diagnosis of infections caused by *Candida* species. Add a note on the antifungal susceptibility testing of *Candida* species.
2. Enumerate commonly encountered healthcare associated infections. Write in brief on the role of microbiology laboratory in their diagnosis. Add a note on hospital antibiotic policy.

II. Write Short notes on: (10 x 5 = 50)

1. Biomedical waste management.
2. Sporotrichosis.
3. Vaccine delivery systems.
4. Mycetoma.
5. Nosocomial diarrhoea.
6. One health approach.
7. Rapid sepsis diagnosis.
8. Biofilms.
9. mRNA vaccine.
10. Point of care tests in Microbiology.

III. Reasoning Out: (4 x 5 = 20)

1. Urine samples for culture should be processed as soon as possible after collection.
2. It is important to ensure that all incubators used in microbiology laboratories maintain constant desired temperature.
3. Quality control of media and antibiotics used for antimicrobial susceptibility testing is important.
4. Negative staining technique is essential for presumptive diagnosis of *Cryptococcal* meningitis.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 0723]

**JULY 2023
(MAY 2023 EXAM SESSION)**

Sub. Code: 2017

**M.D. DEGREE EXAMINATION
BRANCH IV – MICROBIOLOGY**

**PAPER IV – MYCOLOGY, APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. List the causative agents of Mucormycosis. Discuss the pathogenesis, laboratory diagnosis and complications of Rhinocerebral Mucormycosis.
2. Enumerate the diseases transmitted through water. Discuss the tests to detect disease causing micro organisms in water, presumptive coliform count and differential coliform count.

II. Short notes: (10 x 5 = 50)

1. Penicilliosis.
2. Mycotoxins.
3. Tinea Nigra Palmaris.
4. Candida auris.
5. Pathogenesis of Histoplasma capsulatum.
6. Settle Plate Method.
7. Intra nasal vaccine.
8. Health Care Associated Pneumonia.
9. Care Bundles.
10. Artificial Intelligence in Clinical Microbiology.

III. Reasoning Out: (4 x 5 = 20)

1. Effluent Treatment Plant is mandatory for a hospital.
2. β -d-Glucan assay is surrogate marker for invasive fungal infection.
3. Slide culture is useful in mycology.
4. Patient on central venous catheter develops fever after three days.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MD 1223]

**DECEMBER 2023
(OCTOBER 2023 EXAM SESSION)**

Sub. Code: 2017

M.D. DEGREE EXAMINATION

BRANCH IV – MICROBIOLOGY

**PAPER IV – MYCOLOGY, APPLIED MICROBIOLOGY AND
RECENT ADVANCES**

Q.P. Code: 202017

Time: Three Hours

Maximum: 100 Marks

I. Essay: (2 x 15 = 30)

1. Enumerate cutaneous fungal infections caused by dermatophytes. Describe the morphology, pathogenesis and laboratory diagnosis of *Trichophyton rubrum*.
2. What is Bio-medical Waste? Discuss about the generation, segregation, collection, transport and disposal methods of bio medical waste as per the existing rules.

II. Short notes: (10 x 5 = 50)

1. Chromoblastomycosis.
2. Laboratory diagnosis of Histoplasmosis.
3. Piedra.
4. Lobomycosis.
5. Reynolds-Braude phenomenon.
6. Milk Ring Test.
7. Ventilator Associated Pneumonia.
8. Faecal Microbiota Transplantation for Inflammatory Bowel Disease.
9. Audit of antibiotic prescribing practice in a tertiary care hospital.
10. DNA vaccine.

III. Reasoning Out: (4 x 5 = 20)

1. Yellow granules were observed in the wound dressing of a patient with lesion in the neck.
2. Sabouraud dextrose agar pH is acidic.
3. Incidence of surgical site infections is less in operation theatres with laminar air flow.
4. Patient is kept in positive pressure room after liver transplant surgery.
