POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MICROBIOLOGY EXAMINATION
JANUARY,1990

Date: 22nd January, 1990 Time: 2.00 - 5.00 p.m.

PAPER I

Answer only 5 questions.
Each questions to be answered in a separate book.

1. Write short notes on 4 of the following:

   (a.) Bacterial Flagellae
   (b) Resistance transfer f actor
   (c) Blasmids
   (d) Zeihl-Neelson stain
   (e) Clostridium welchii food

2. Describe four of the following tests and explain their biochemical bases.

   (a) Methyl red (MR) test
   (b) Voges Proskauer (VP) test
   (c) Indole test
   (d) O.N.P.G. test
   (e) Citrate utilization test

3.
   (a) How would you subdivide streptococci for work in your own laboratory ?

   (b) Describe the pathogenesis and laboratory diagnosis of three clinical conditions associated with Streptococcus pyogenes.

4. Write an essay on the Genus Shigella.

5. Write short notes on three of the following,

   (a) Neonatal tetanus
   (b) Toxin of C. diphtberiae
   (c) Listeria monocytogenes
   (d) Laboratory diagnosis of subacute bacterial endocarditis.

6. Write an essay on hospital cross infection.

POSTGRADUAATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MICROBIOLOGY EXAMINATION
JANUARY 1990

Date: 23rd January, 1990 Time: 2.00 p.m. - 5.00 p.m.

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each part. (Answer each part in a separate book)

PART A -VIROLOGY

1. A child admitted to a Ward had 5 days fever followed by hemorrhage and shock. How would you investigate this case to establish the diagnosis and what advice would you give the pediatrician regarding management.

2. Write an account of the human herpes viruses.

PART B - IMMUNOLOGY

3. Write an essay on complement

4. Discuss the limitations of the immunofluorescent technique in the diagnosis of tropical disease.

PART C - PARASITOLOGY

5. Give an account of the laboratory diagnosis of infections caused by Entamoeba histolytica

6. Write on,
   6.1 Parasitological diagnosis of bancroftian filariasis
   6.2 Strongyloidiasis

PART D - MYCOLOGY

7. Write on any FOUR of the following,

   7.1 Allergic bronchopulmonary aspergillosis

   7.2 Epidermophyton flocossum

   7.3 Histoplasma dubosii

   7.4 Pseudohyphae

   7.5 Chlamydospores

8. Describe the mycological and clinical features of chromoblato mycosis

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICIL MICROBIOLOGY EXAMINATION
MAY, 1991

Date: 30th May, 1991 Time: 2.00 p.m.- 5.00 p.m.

PAPER I

Answer only 5 questions.
Each question to be answered in a separate book.

1. Write on,

   (a) A-typical mycobacteria
   (b) Exotoxins
   (c) Bacterial fimbriae

2. What criteria are deemed necessary for the eradication compaign of an infectious disease to be successful?

   Illustrate your answer with appropriate examples.

3. Write an essay on leptospirosis.

4. Discuss with examples the value of microscopy in the diagnosis of microbial disease.

5. Discuss the role of E. Coli in diarrhoel disease.

6. Write on,

   (a) Method a of culture for anaerobic bacteria
   (b) Lysogeny
   (c) Capsules in relation to virulence

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICIL MICROBIOLOGY EXAMINATION
MAY, 1991

Date: 31st May, 1991 Time: 2.00 p.m. - 5.00 p.m.

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each part. (Answer each part in a separate book.)

PART A - VIROLOGY

1. Discuss the aetiology, diagnosis and prognosis of acute viral hepatitis.

2. Discuss the pathogenesis of viral infections.

PART B - IMMUNOLOGY

3. What investigations should be carried out on a one year old child suspected of being immuno deficient.

4. Write on,

   (a) Immunoglobulin E(IgE)
   (b) Immunoglobulin tolerance
   (c) Immune complexes

PART C - PARASITOLOGY

5. Give an account of the diagnosis, mode of transmission and prevention of the following diseases.

   (a) Hookworm infection
   (b) Taeniasis
   (c) Giardiasis

6. Describe one immunity, diagnostic test for each of the following diseases.

Discuss the advantages and disadvantages of the method described for each infection.

(a) Bancroftian filariasis
(b) Hepatic amoebiasis

PART D - MICOLOGY

7. Write an essay on fungal infections in the immunocompromised patient.

8. A patient is referred to you with a swelling involving his foot and ankle region of ten years duration.

There are a few discharging sinuses.

(a) Describe the procedures you would adopt to establish a mycotic aetiology.
(b) What Organisms would you expect to find.

Describe in details the mycological features of two of these organisms.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY (REPEAT) EXAMINATION - MARCH, 1992

Date: 3rd March, 1992 Time :2.00 p.m. - 5.00 p.m.

PAPER I

Answer only 5 questions.
Each question to be answered in a separate book.

1.

1.1 State 3 mechanisms by which bacteria resist the action of antibiotics.

1.2 Discuss (giving examples) how the spread of antibiotic resistant bacteria could be controlled in a General Hospital.

2. Describe the bacteriological diagnosis (including collection, transport and processing of specimens) of the following diseases: -

2.1. Infective endocarditis
2.2 Urinary tract infection in a 3 year old female child.
2.3 Infected would following an elective Cesarean section.

3.

3.1. Enumerate the infectious causes of vaginal discharge.

3.2. Discuss the laboratory diagnose of 3 of them.

4.

4.1. Give an account of the development of a bacterial spore.

4 .2. Describe the structure and properties of a mature spore and give a brief account of the process of germination and outgrowth.

5. Write on essay on coagulase negative staphylococci

6. Write on,

6.1. Mycobacteria fortuitum
6.2. Enteropathogenic E.coli
6.3. Group B streptococci

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY (REPEAT) EXAMINATION
MARCH, 1992

Date: 4th March, 1992 Time: 2.00 - 5.00p.m.

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each Part. (Answer each part in a separate book)

PART A - VIROLOGY

1. Discuss in detail the management of a person who has been bitten on both hands by a stray dog.

2. Discuss the role of MMR (Measles, Mumps, and Rubella) vaccine in an expanded program of immunization.
   What are the advantages if any over the present schedule of using only Measles vaccine?

PART B - IMMUNOLOGY

3. Discuss the role of the macrophage in the immune response.

4. Write on,

   4.1 Arthus phenomenom
   4.2. Principle of the, ELISA test
   4.3. IGE

PART C - PARASITOLOGY

5.

5.1. Name the parasites, which are capable of producing diarrhea with blood and mucus in man.

5.2 Outline the mode of transmission and the laboratory diagnosis of the diseases produced by each of them

6. Write on,

6.1. The parasitic stages seen in the peripheral blood of patients with benign tertian and malignant tertian malaria.

6.2. The laboratory diagnosis of Enterobius vermicularis

PART D - MICOLOGY

7. Discuss the infections caused by dermatophytes. What measures can be taken to control their infections?

8. Describe the different varieties of candida infections. What Steps would you take to diagnose these infections in the laboratory?

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
AUGUST, 1993

Date: 23rd August, 1993 Time: 2.00 p.m. - 5.00 p.m.

PAPER I

Answer only 5 questions.
Each question to be answered in a separate book.

1. There has recently been an outbreak of diphtheria among children in a school dormitory.
   How would you investigate and attempt to control the epidemic.

2. Write on,

   (a) Pneumocystis carinii
   (c) Mycobacterium avium-intracellular
   (c) Bacillus cerus

3. Discuss the mode of action of penicillin and mechanisms of bacterial resistance to them.

4. Discuss the various methods available for the sterilization and disinfection of heat sensitive equipment and material

5. "The mortality from infectious diseases is now a tiny fraction of what it was in the beginning of the 20th century". What factors have contributed to this?

6. Write on,

   (a) Testing for B lactamase production by bacteria
   (b) Helicobacter pylori
   (c) Haemophilus influenzae vaccine

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
AUGUST, 1993

Date: 24th August, 1993 Time: 2.00 - 5.00p.m.

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each part. Answer each part in a separate book.

PART A - VIROLOGY

1. Discuss the epidemiology and control of Japanese Encephalitis with special reference to the situation in Sri Lanka.

2. Write on,

   (a) Replication of RNA viruses with particular reference to clinical and epidemiological implications
   (b) Hepatitis C virus
   (b) Burkitt's lymphoma

PART B - IMMUNOLOGY

3. Discuss the pathogenesis and immunological basis of ,

   (a) Serum sickness
   (b) Atopic allergy
   (c) Drug induced hemolytic anemia

4. Describe the process of phagocytic killing of microorganisms.
   What diseases are associated with defects in phagocytosis?

PART C – PARASITOLOGY

5. Give a brief accounts of the various clinical presentations of Amoebiasis and indicates the laboratory tests you would use to confirm the diagnosis in each of these presentations.

6.

(a) Outline the techniques available to establish the presence of microfileria of Wuchereria bancrofti in the blood

(b) Describe the parasitic stages present in the peripheral blood of a patient with Plasmodium vivax malaria

PART D - MYCOLOGY

7. Name the superficial fungal infections prevalent in Sri Lanka and the organisms responsible for each of them.
Discuss the various clinical and cultural characters, which distinguish two species, which give rise to scalp ringworm in this country.

8. A patient is brought to you with a swelling of one foot and discharging sinuses of 5 years duration.
What procedures would you adopts in the laboratory to exclude or prove a fungal etiology.
What fungi could be responsible for this condition. Describe the characteristic of one of these.

POSTGRADUATE INSTITURE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
JANUARY, 1996

Date: 11th January, 1996 Time:2.00 p.m. - 5.00 p.m.

PAPER I

Answer only 5 questions.
Each question to be answered in a separate book.

1. Discuss the mechanisms used by bacteria to resist chemotherapeutic agents and their relevance to human disease.

2. Describe briefly the methods available for isolation of microbial pathogens from blood and discuss using examples, the role of blood culture in the management of infective disease.

3. Write on,

   (a) Safe disposal of laboratory waste

   (b) Strategies of preventing overgrowth of contaminating bacteria in a midstream urine specimen during transport to the laboratory.

   (c) Assessment of microbial contamination of air in an operating theatre.

4. Discuss the problem of Leptospirosis in Sri Lanka with reference to epidemiology, laboratory diagnosis and prevention

5. How are vibrio's classified? Discuss the laboratory diagnosis of cholera and methods of prevention and control of an outbreak.

6. Outline the methods available for grouping/typing of
   Discuss the diseases caused by streptococci other than Streptococcus pyogenes

POSTGRADUATE INSTITURE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
JANUARY, 1996

Date: 12th January, l996 Time: 2.00 p.m. - 5.00 p.m.

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each Part Answer each part in a separate book.

PART A - VIROLOGY

1. Write on

   (a) The classification of Retroviridae giving the main clinical syndromes caused by each virus tupe.

   (c) the action of acyclovir

   (c) Universal precautions

2. Write on

   (a) The clinical syndromes caused by the cytomegalovirus (CMV) and the laboratory diagnosis of CMV infection

   (b) Rotavirus infection

PART B - IMMUNOLOGY

3. Discuss the role of complement in the body's defense against bacterial diseases.

4. Direct antigen detection is used to diagnose a variety of microbial diseases. Outline the methods employed and the role of such test in routine diagnostic laboratories.

PART C - PARASITOLOGY

5. A Sri Lankan adult male presenting with fever on return from a trip to Yala is suspected to have malaria.
Discuss the management of this case.

6. Write an account on parasitic disease that humans could acquire from dogs in Sri Lanka.

PART D - MYCOLOGY

7. Discuss critically the methods available for diagnosis of mycotic disease

8. Write on :

   (a) dimorphism among fungi

   (b) Microsporum gypseum

   (c) Histoplasma capsulatum

   (d) Sabaraud's medium

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
NOVEMBER, 1996

Date: - 7th November, 1996 Time: - 2.00 p.m. - 5.00 p.m.

PAPER I

Answer only 5 questions.
Each question to be answered in a separate book.

1. Write on
   (a) Bacterial mutation
   (b) Transdution
   (c) Bacterial DNA

2.
   (a) Make a list of 5 bacterial infections you would include in a notifiable disease register.

   (b). Indicate how each infection should be defined for reporting purposes.

   (c). Critically discuss the reasons for your inclusion of each.

3. Write on :

   (a) Laboratory diagnosis and management of Cl. Difficile infections

   (b) Decontamination of endoscopes

   (c) Management of vancomycin resistant enterococcal infections.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
NOVEMBER, 1996

Date:- 8th November, 1996 Time: - 2.00 p.m. - 5.00 p.m.

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each part. Answer each part in a separate book.

PART A - VIROLOGY

1.

1.1. What is an arbovirus ?

1.2 Compare and contrast the epidemiology of Dengue and Japanese encephalitis in Sri Lanka.

1.3. Describe the laboratory diagnosis of Dengue and comment on its interpretation.

2. Write on:

2.1. Hepatitis E virus
2.2. Respiratory syncitial virus
2.3. Herpes zoster

PART B - IMMUNOLOGY

3.

3.1. Describe the mechanism of Type I hypersensitivity

3.2. Describe the clinical and laboratory tests available to investigate allergy.

4. Discuss the role of chemical mediators in the acute inflammatory response.

PART C - PARASITOLOGY

5. Describe the Collection and processing of the following specimens from an HIV positive patient

   5.1. Faecal sample for Cryptosporidium

   5.2. Blood sample for malaria

6.

   6.1. Describe the parasitological and pathological basis underlying the lesions in ocular parasitoses in Sri Lanka.

   6.2. Give a brief account of the laboratory diagnosis in each of these infections.

PART D - MYCOLOGY

7. Write on :

   7.1. Trycophyton mentagrophytes
   7.2. Arthrospores
   7.3. Aspergillus fumigatus

8. Describe the aetiological agents and clinical features of chromoblastomycosis.

POSTGRDUATE INSTITUTE OF MEDICINE
UNIVFRISITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
DECEMBER, 1997

Date: 1st December, 1997 Time: 2.00 p.m. - 5.00 p.m.

PAPER I

Answer only 5 questions.
Each question to be answered in a separate book.

1. Describe the morphology and biological properties of Mycoplasma pneumoniae. Give an account of the laboratory diagnosis of Mycoplasma pneumoniae infections.

2. There has been an outbreak of cholera in a remote part of the country. Describe the measure you would adopt for the laboratory diagnosis and control of such an epidemic.

3. Write on: -
   3.1 Modes of transmission of hospital infection
   3.2 ciproflokacin
   3.3 New variant Creutzfeld-Jacob disease
   3.4 Streptococcus milleri

4. Describe the classification of the genus Pseudomonas. Discuss the pathogenicity and the laboratory diagnosis of infections caused by three of the species you mention.

5. Mention three bacterial causes of food poisoning in Sri Lanka. Discuss their epidemiology, pathogenesis and laboratory diagnosis.

6. Write on:

   6.1 Penicillin resistant Streptococcus neumoniae
   6.2 Necrotising fasciitis
   6.3 Toxic shock syndrome
   6.4 Whooping cough vaccines

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOM IN MEDICAL MICROBIOLOGY EXAMINATION
DECEMBER, 1997

Date: 3rd December, 1997 Time:9.00 a.m. - 12.00 noon

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each part. Answer each part in a separate book.

PART A - VIROLOGY

1.

1.1. Tabulate the viruses that cause hepatitis giving virus group, nucleic acid type, sequelae and high-risk groups.

1.2 Describe the vaccines available to prevent hepatitis.

2. Describe in detail how you would investigate the following:

2.1 A 3-year-old boy admitted to hospital with acute flaccid paralysis of the right lower limb of 3 days duration.

2.2 A 22-year-old man clinically diagnosed as a case of encephalitis.

PART B - IMMUNOLOGY

3. Write an essay on immunoprophylaxis.

4. Discuss transplantation rejection.

PART C – PARASITOLOGY

5. Discuss the value of rapid dipstick methods in the diagnosis of malaria and its relevance to disease control, in Sri Lanka.

6.

6.1 Describe the pathological effects, which could be caused by infections with strongyloides stercoralis.

6.2 Give an account of how you would determine the prevalence of Strongyloidiasis in a rural community in Sri Lanka.

PART D - MYCOLOGY

7. Write on:

7.1 Aspergilloma
7.2 Microconidia
7.3 Chlamydospore,
7.4 Sporotrichum schenkii

8. Discuss the role played by opportunistic fungi in the causation of human disease.

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF.COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
JUNE, 1998

Date: - 8th June, 1998 Time :- 2.00 p.m. - 5.00 p.m.

PAPER I

Answer only 5 questions.
Tie up answers to question 1 and 2 together and question 3 to 6 together.

1. Discuss the mode of action of aminoglycoside antibiotics, their spectrum of antimicrobial action and the mechanisms of bacterial resistance.

2. Discuss the pathogenesis, laboratory diagnosis and epidemiology of group A beta-haemolytic Streptococcus infections.

3. Write on:
   - 3.1. Macrolide antibiotics
   - 3.2. Hypochlorite disinfectant
   - 3.3. Beta-lactamases
   - 3.4. Phage typing

4. Discuss the aetiology, pathogenesis, laboratory diagnosis and management of clostridial myonecrosis (gas gangrene)

5. Discuss the role of coagulase negative Staphylococci in hospital acquired infections.

6. Write on:
   - 6.1. Scrub typhus
   - 6.2. Pneumocystis carinii pneumonia
   - 6.3. Haemophilus influenza type B vaccine

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF.COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
JUNE, 1998

Date: 11th June, 1998 Time: 9.00 a.m. - 12.00 noon

PAPER II

Answer 5 questions of which at least ONE QUESTION should be from each part.
Answer EACH QUESTION IN A SEPARATE BOOK.

PART A - VIROLOGY

I. Write on:

1.1 Viral infections that can cause death of a foetus.
1.2. Hepatitis A vaccine

2. Write an account of Influenza A viruses

PART B - IMMUNOLOGY

3. Describe the cell-mediated immune response against microbial infections.

4. Write on:

4.1. Principle of the Western blot test

4.2. Mechanisms of immuno deficiency that occur in HIV infection

4.3. Major histocompatibility complex

PART C - PARASITOLOGY

5. Explain the parasitological and pathological basis for the following clinical presentations caused by parasitic infections in a Sri Lankan with no history of foreign travel.

    5.1. Anemia
    5.2. Impaired vision
    5.3. Lymphoedema of a lower limb.

6. Discuss critically the use of a single stool wet-smear in the laboratory diagnosis of gastrointestinal parasitic infections in Sri Lanka.

PART D - MYCOLOGY

7. Write on:

    7.1 Cryptococcus neoformans
    7.2. Nocardia asteroids
    7.3. "Chlamydospores" in fungal culture
    7.4. Fumigatus

8. Describe the clinical features of infections caused by dermatophytes. Describe in detail the morphology and culture characteristics of 3 dermatophytes which may-be isolated from infections of the head

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF.COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER, 2000

Date: 5th October, 2000 Time : 2.00 p.m. - 5.00 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book.

1. Discuss the pathogenesis, laboratory diagnosis and control of whooping cough. (100 marks)

2. Write on:

   2.1 Disinfection of endoscopes (15 marks)

   2.2 Laboratory diagnosis of genital chlamydial infection (25 marks)

   2.3 Enterohaemorrhagic Escherichia coli 0 157:H 7 (30 marks)

   2.4 Penicillin resistant pneumococci (30 marks)

3. Write on:

   3.1 Rapid Diagnostic Tests for malaria and their advantages and disadvantages over microscopy. (50 marks)

   3.2 Chemotherapy for the treatment and control of lymphatic filariasis. (50 marks)

4. A 25-year-old nursery school teacher in her 12th week of pregnancy presents to the antenatal clinic with a history of fever and erythematous macular rash of one-day duration. She gave a history of rubella vaccination. When she was a teenager. Rubella was suspected and a sample of blood was sent for virological investigations.

4.1 Explain why rubella was suspected? (10 marks)

4.2 What other viral infections would you consider in the differential diagnosis ?
Give the relevance of such infections in pregnancy. (20 marks)

4.3 Explain briefly the significance of rubella infection in the different trimesters of pregnancy. (20 marks)

4.4 What are the possible serological reports you would expect in this patient and how would you interpret them. (50 marks)

5. Write on :

5.1 Super antigens (30 marks)

5.2 Major histocompatibility complex. (35 marks)

6. Describe the pathogenesis and laboratory diagnosis of the following clinical conditions.

6.1 Tinea pedis (25 marks)

6.2 Bumycetoma (40 marks)

6.3 Cryptococcal meningitis (35 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
(OLD REGULATIONS)
OCTOBER 2001

Date: 22nd October 2001 Time: 1.30 p.m .- 4.30 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book

1. Describe the mode of action of beta lactams, their spectrum of activity and the mechanism of bacterial resistance to them. (100 marks)

2. Write notes on

   2.1 *Mycoplasma pneumoniae* pneumoma (35 marks)

   2.2 High level disinfectants and their application in hospital practice (35 marks)

   2.3 *Haemophilus ducreyi* (30 marks)

3. A pregnant woman has reported to an antenatal clinic with a typical chiken pox rash.

   3.1 Describe the complications in the different stages of pregnancy (30 marks)

   3.2 Outline the management giving reasons, if she is 37 weeks pregnant (30 marks)

   3.3 Describe the basis of latency and recurrences of this disease (30 marks)

   3.4 Explain the differences if any, in the management if she had developed herpes-zoster (shingles) (10 marks)

"""""

4. A blood and stool parasite survey of an urban community in Sri Lanka, carried out using a 20.00 hour thick film and a direct wet smear (saline and iodine) stool examination, showed the following prevalence patterns.

   a) Microfilariaemia 02%
   b) Pathogenic protozoa 16%
   c) Helminth eggs 40%

   4.1 Name the likely parasite(s) responsible for each of these laboratory findings (10 marks)

   4.2 Explain briefly morbidity patterns relating to these infections, that you would expect to see in this community (40 marks)

   4.3 Discuss the technical limitations of this survey (50 marks)

5. Write notes on

   5.1 The mechanisms involved in the immediate reaction of anaphylaxis. (50 marks)

   5.2 lmmunopathogenesis of adult respiratory distress syndrome (ARDS) (50 marks)

6. An adult male visits the dermatology clinic complaining of a swelling of the left foot with multiple discharging sinuses lasting for 6-7 years.

   6.1 What is the probable clinical diagnosis ? (10 marks)

   6.2 List four aetiological agents that may cause this condition (20 marks)

   6.3 Describe the collection of specimens and techniques to establish a laboratory diagnosis in this patient. (40 marks)

   6.4 Outline the antimicrobial treatment of this condition (30 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER 2001

Date: 22nd October 2001 Time: 1.30 p.m .- 4.30 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book

1. Describe the mode of action of beta lactams, their spectrum of activity and the mechanisms of bacterial resistance to them. (100 marks)

2. Write notes on

   2.1 The principle and applications of polymerase chain reaction in the diagnosis of infective disease (35 marks)

   2.2 Skin infections caused by non tuberculosis mycobacteria (30 marks)

   2.3 Western Blot test in the diagnosis of Human Immunodeficiency Virus (HIV) infection (35 marks)

3. An antenatal patient gives a history of recent contact with chicken pox.

   3.1 Describe the complications of chicken pox in the different stages of pregnancy (20 marks)

   3.2 How do you determine her susceptibility to *varicella zoster* virus (VZV) infection ? (20 marks)

   3.3 Outline the management giving reasons, if she is found to be susceptible to VZV infection (20 marks)

   3.4 Describe the basis of latency and recurrences of this disease. (30 mark)

   3.5 Explain the differences if any, in the management if she was exposed to herpes zoster (shingles) (10 marks)

4. Write notes on

4.1 Transmission of rickettsial disease to humans by arthropods (50 marks)

4.2 Autoinfection in human helminthiasis (50 marks)

5. Write notes on

5.1 Explain the mechanisms involved in the immediate reaction of anaphylaxis. (50 marks)

5.2 Immununopathogenesis of adult respiratory distress syndrome(ARDS) (50 marks)

6. An adult male visits the dem1atology clinic complaining of a swelling of the left foot with multiple discharging sinuses, lasting for 6-7 years.

6.1 What is the probable clinical diagnosis ? (10 marks)

6.2 List four aetiological agents that may cause this condition (20 marks)

6.3 Describe the pathogenesis of this condition (30 marks)

6.4 Discuss the essential investigations and their interpretation in establishing a laboratory diagnosis in this patient. (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER, 2002

Date:- 21st October, 2002 Time :- 1.30 p.m. - 4.30 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book.

1. Write briefly on the morphology, cultural characteristics and pathogenicity of :

   1.1. *Listeria monocytogenes* (50 marks)

   1.2. *Clostridium difficile* (50 marks)

2. Write notes on the following:

   2.1. Methods for destroying Cruetzfeldt Jakob agent (prions) (35 marks)

   2.2. Engineering features and maintenance of a class II biohazard safety cabinet (35 marks)

   2.3. Quality control of culture media (30 marks)

3. Write notes on the following:

   3.1. Role of neutrophils in human infection (30 marks)

   3.2. DNA based methods used for typing of microorganisms (35 marks)

   3.3. Specificity and sensitivity of serological tests (35 marks)

4.

   4.1. List the aetiological agents and describe the laboratory diagnosis of respiratory infections caused by viruses. (70 marks)

   4.2. What factors are considered in the use of MR vaccine in the-National Immunization Programme ? (30 marks)

5.

5.1. Name two (2) parasites that cause severe anaemia in humans (10 marks)

5.2. Explain the mechanisms by which these parasites cause anaemia in infected persons. (50 marks)

5.3. Describe the preventive measures that a person should take against these parasites. {40 marks)

6.

6.1. List three (3) systemic fungal infections that are of lower prevalence in Sri Lanka compared to other Southeast Asian countries. (15 marks)

6.2. Explain the epidemiological basis for the above difference. (25 marks)

6.3. Describe the laboratory diagnosis of any two (2) of the infections mentioned in 6.1 (60 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER, 2003

Date :- 20th October, 2003 Time :- 1.30 p.m. - 4.30 p.m

ESSAY PAPER

Answer all questions.
Answer each question in a separate book.

1.

1.1 Discuss the importance of selective culture media in a diagnostic laboratory. Give examples to illustrate your answer. (60 marks)

1.2. Explain how you would ensure the expected performance of selective culture media. (40 marks)

2. Write on :

2.1. Vancomycin resistant enterococci. (25 marks)
2.2. Aminoglycoside modifying enzymes. (25 marks)
2.3 Group B streptococci (25 marks)
2.4. Epidemic typhus fever. (25 marks)

3. Explain the v**irological** and **immunological** basis of :

3.1. epidemiology of influenza. (35 marks)

3.2. laboratory diagnosis of Epstein Barr Virus (EBV) infections (35 marks)

3.3. pathogenesis of dengue and its complications. (30 marks)

4. Discuss the role of macrophages in combating infection. (100 marks)

5. A resident of Colombo develops fever with chills and rigors after a pilgrimage to Madhu. His family physician diagnoses malaria and treats him with chloroquine. Three weeks later, he develops fever again.

5.1. Explain the parasitological basis for the mechanisms that are most likely to cause recurrence of malarial fever in this patient. (30 marks)

5.2. Discuss the laboratory investigations and findings that will enable you to determine which of these mechanisms has caused the recurrence of fever in this patient. (45 marks)

5.3. Explain why it is important to find out the reasons for recurrence. (25 marks)

6.

6.1. List the fungi that cause human infections by inhalation. (15 marks)

6.2. Describe the laboratory diagnosis of any two (2) of them. (60 marks)

6.3. Discuss the relevance of the findings in the laboratory diagnosis of the two fungi you selected in 6.2. (25 marks)

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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER, 2004

Date:- 25th October, 2004 Time :- 1.30 p.m. - 4.30 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book.

1.

1.1. Define the terms "critical items", "semicritical items" and "non critical items" in hospital use giving two examples for each. (15 marks)

1.2 Briefly describe the methods available for sterilization and/or disinfection of items mentioned in 1.1. (35 marks)

1.3 Discuss the advantages and disadvantages of the methods mentioned in 1.2 with special emphasis to the spectrum of activity. (50 marks)

2. Write notes on :

2.1 Bacterial exotoxins in the pathogenesis of diarrhoeal disease (60 marks)

2.2 *H aemophilus influenzae* type b vaccine. (40 marks)

3.

3.1 Name the programme in which acute flaccid paralysis (AFP) surveillance is done. What age group comes under this surveillance. (05 marks)

3.2 Give 3 reasons for this surveillance. (15 marks)

3.3. Give 2 indicators used in the evaluation of AFP surveillance. (10 marks)

3.4 When a case of AFP is suspected what samples are needed for virological investigations. Explain the rationale for getting these samples. (20 marks)

3.5 What are the criteria for accepting a sample by the reference laboratory in the AFP surveillance. (10 marks)

3.6 Give a brief account of the tests done in the reference laboratory to test the sample mentioned in 3.5 (40 marks)

4. Describe the following:

4.1. Role of cytokines that are responsible for the control of infectious disease and the development of pathology. (50 marks)

4.2. Mechanisms of rejections and factors that are important in the survival of bone marrow transplants. (50 marks)

5.

5.1. Give a brief account of the factors that promote the transmission of intestinal nematode infections to humans. (50 marks)

5.2. Describe the differences in the breeding habits and the geographical distribution of vectors that transmit malaria and bancroftian. filariasis in Sri Lanka. (50 marks)

6.

6.1. Discuss the epidemiology and pathogenesis of systemic infections caused by yeasts. (60 marks)

6.2. Describe briefly how you would process a sample of cerebrospinal fluid to identify a yeast mentioned in 6.1. (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER, 2005

Date:- 24th October, 2005 Time:- 1.30 p.m. - 4.30 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book.

1.

1.1 List the mechanisms through which a change may occur in the genome of a bacterial cell. (10 marks)

1.2 Describe each of these. Mechanisms (30 marks)

1.3 Explain how these mechanisms lead to the spread of antimicrobial Resistance (20 marks)

1.4 Describe, giving examples, the different antibacterial resistance Mechanisms demonstrated by bacteria (40 marks)

2. Write notes on :

2.1 Pneumococcal vaccine (30 marks)

2.2 *Corynebacterium jeikeium* (30 marks)

2.3 Laboratory diagnosis of bacterial meningitis (40 marks)

3.

3.1 Name the aetiological agents of acute viral hepatitis (20 marks)

3.2 Describe sample collection, transport and laboratory methods available for the aetiological diagnosis of acute viral hepatitis (80 marks)

4.

4.1 List the components of innate immunity (15 marks)

4.2 Name three features that differentiate innate from specific immunity (15 marks)

4.3 Discuss the role of the innate immune system in the normal immune response (70 marks)

5. Describe the mechanism of action, therapeutic use, mode of administration and adverse reactions of the following antifungals:

5.1 Amphotericin B (25 marks)

5.2 Fluconazole (25 marks)

5.3 Itraconazole (25 marks)

5.4 Griseofulvin (25 marks)

6. 6.1 Name two protozoan parasites that are known to commonly cause diarrhoe (10 marks)

6.2 Outline the laboratory investigations that would enable you to make a definitive diagnosis of one of the parasites you named above (40 marks).

6.3 Discuss the usefulness of examining faecal wet smears in the laboratory investigation of intestinal infections caused by protozoa and helminths (50 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER, 2006

Date :- 16th October 2006 **Time** :- 1.00 p.m. - 4.00 p.m.

ESSAY PAPER

Answer all 6 questions.
Answer each question in a separate book.

1.

1.1. Describe the mode of action of macrolides. (25 marks)

1.2. Describe their spectrum of activity and the mechanisms of resistance. (50 marks)

1.3. What are the potential advantages of the newly described macrolides over erythromycin ? (25 marks)

2.

2.1. Describe the pathogenesis of infections caused by *Escherichia coli.* (50 marks)

2.2. How are the leptospirae classified ?
Describe their pathogenesis and methods available for laboratory diagnosis. (50 marks)

3. Write short notes on :

3.1. Laboratory diagnosis of dengue virus infection. (60 marks)

3.2. Clinical manifestations of human parvovirus B,19 infection. (40 marks)

4.

4.1. Name the three pathways of activation of the complement system. (15 marks)

4.2. What triggers the activation of each of these pathways ? (3 marks)

4.3. Discuss briefly the ways in which the complement system tackles infection. (Details of the pathways are not necessary) (45 marks)

4.4. How does the complement system dispose of immune complexes ? (10 marks)

5.

5.1. List the subcutaneous fungal infections and their causative agents. (15 marks)

5.2. Briefly describe the epidemiology and pathogenesis of any three infections you mentioned in 5.1. above. (25 marks)

5.3. Describe in detail tpe laboratory diagnosis of the causative agent(s) of the three infections you described in 5.2. above. (60 marks)

6.

6.1. List the infectious stages of *Toxoplasma gondii* stating in what form you can see these stages in a stained/unstained smear. (20 marks)

6.2. State the modes of transmission of *Toxoplasma gondii* infection to humans. (40 marks)

6.3. What are the preventive measures you could take to avoid the acquisi tion of above infection. (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY. OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER 2007

Date: 15th October 2007 Duration: 3 hours

Time: 1.00 p.m. - 4.00 p.m.

ESSAY PAPER

Answer all 6 questions.
Answer each question in a separate book.

1.

1.1 List the bacteria that cause toxin mediated diarrhoea (25 marks)

1.2 Describe the models of action of toxins causing diarrhoea giving examples (75 marks)

2.

2.1 List the virulence factors of *Staphylococcus aureus* (20 marks)

2.2 Describe the spectrum of clinical manifestations due to S. *aureus* (50 marks)

2.3 How does the community acquired methicillin resistant S. *aureus* (CMRSA) differ from hospital acquired MRSA ? (30 marks)

3.

3.1 Classify the clinical syndromes caused by cytomegalovirus (CMV) infection. (20 marks)

3.2 Write on the laboratory diagnosis of CMV infection. (40 marks)

3.3 Write on prophylaxis of chicken pox. (40 marks)

4. Describe the mechanisms by which a pathogen is cleared from the body. (100 marks)

5. List the aetiological agent/sand describe briefly the pathogenesis and laboratory diagnosis of the following:

5.1 Onychomycosis (35 marks)

5.2 Rhinofacial mucormycosis (30 marks)

5.3 Pulmonary histoplasmosis (35 marks)

6.

6.1 Name three (3) parasites that cause anaemia in humans. (15 marks)

6.2 Taking **ONE** parasite mentioned above as an example:

6.2.1 Explain the pathological basis of anaemia that occurs as a result of infection (25marks)

6.2.2 Critically evaluate the laboratory methods available for diagnosis (35 marks)

6.2.3 State briefly the methods that could be used for the control of this infection in the community. (25 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

,DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER 2008

Date: 13th October 2008 Duration: 3 hours
Time: 1.00 p.m. - 4.00 p.m.

ESSAY PAPER

Answer all 6 questions.
Answer each question in a separate book.

1.
- 1.1 Describe the structure, characteristics and methods of demonstration of bacterial spores (50 marks)
- 1.2 Discuss methods available to maintain bacterial stock cultures. (50 marks)

2.

Describe the pathogenesis and laboratory diagnosis of the following:
- 2.1 Diphtheria (40 marks)
- 2.2 Bacterial vaginosis (25 marks)
- 2.3 Pseudomembranous colitis (35 marks)

3.
- 3.1 List the viral causes of encephalitis in Sri Lanka (10 marks)
- 3.2 Describe the prevention and control of the following:
  - 3 .2.1 Japanese encephalitis (45 marks)
  - 3.2.2 Hepatitis B virus infection (45 marks)

4.
- 4.1 List the immunoglobulin isotypes and the effector function/s of each isotype (25 marks)
- 4.2 Describe briefly the ways in which antibodies act to protect the host from invading microbes (60 marks)
- 4.3 List three mechanisms by which vaccines induce protective humoral immunity giving an example of a vaccine for each mechanism. (15 marks)

5. Describe the collection of specimens and laboratory techniques in the diagnosis of the following indicating the importance of these steps.
- 5.1 Tinea capitis (45 marks)
- 5.2 Invasive aspergillosis (30 marks)
- 5.3 Mycetoma (25 marks)

6.
- 6.1 Outline the pathological effects caused by the adult stage of *Wuchereria bancrofti* in the human host (60 marks)
- 6.2 List the currently available laboratory techniques in Sri Lanka for diagnosis of bancroftian filariasis and discuss their advantages and limitations. (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTO BER 2009

Date : 21st October, 2009 Time : 1.00 p.m. – 4.00 p.m.

PAPER 1

Answer all 6 questions.
Answer each question in a separate book.

ESSAY PAPER

1.

1.1. Describe the bacterial growth curve. (50 marks)

1.2. List the virulence factors of bacteria and briefly describe **five** of them giving examples. (50 marks)

2.

2.1. Discuss the usefulness of laboratory tests available in Sri Lanka to diagnose enteric fever. (60 marks)

2.2. Write on available vaccines against *Neisseria meningitidis.* (40 marks)

3.

3.1. Describe the diagnosis and control of rubella virus infection. (60 marks)

3.2. Write on antigenic shift and antigenic drift with reference to influenza viruses. (40 marks)

4.

4.1. What are the Types of Hypersensitivity ? (10 marks)

4.2. State the mediator of each Type. (20 marks)

4.3. Name two infectious agents capable of inducing each of the above Types of Hypersensitivity. (30 marks)

4.4. Describe the pathogenesis of Type III Hypersensitivity. (40 marks)

5.

5.1. List the fungal infections of different anatomical structures/organs in the head and neck region and their aetiological agent/agents. (30 marks)

5.2. Describe the laboratory diagnosis of one aetiological agent infecting

5.2.1. soft tissue or mouth (35 marks)
5.2.2. brain (35 marks)

6.

6.1. Name two **parasitic** infections capable of causing an outbreak of diarrhoea in an orphanage. (10 marks)

6.2. Describe the pathogenesis of the infections mentioned above. (50 marks)

6.3. Describe the modes of transmission and the preventive measures for **one** of the parasitic infections mentioned in 6.1. (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN MEDICAL MICROBIOLOGY
EXAMINATION
OCTOBER 2010

Date : 18th October 2010 Time : 1.00 p.m. – 4.00 p.m.

ESSAY PAPER

Answer all 6 questions.
Answer each question in a separate book.

1.

1.1. List **five** different groups of antibiotics and outline their mode and site of action. (25 marks)

1.2. Explain briefly **three** mechanisms of antibiotic resistance in one of the above mentioned groups. (15 marks)

1.3. Enumerate methods available for typing of bacteria and describe **three** of the methods mentioned. (60 marks)

2. Write on –

2.1. Laboratory identification of *Pseudomonas* species. (30 marks)

2.2. Pathogenesis of gonococcal infection. (30 marks)

2.3. Sources of salmonella food poisoning and measures for its prevention. (40 marks)

3.

3.1. Discuss the laboratory diagnosis of dengue virus infection. (60 marks)

3.2. Briefly describe

3.2.1. the laboratory methods for detection of rota virus. (20 marks)

3.2.2. the prevention of acute rota viral gastroenteritis. (20 marks)

4.

4.1. Outline the general properties of cytokines. (40 marks)

4.2. Enumerate the **three** cytokines which play a major role in the acute phase response and describe how they act to combat infection. (50 marks)

4.3. Name **two** laboratory assays that are available to identify cytokines. (10 marks)

5. List the likely aetiological agent/s, outline the methods of transmission and laboratory diagnosis of the following:

5.1: Hypopigmented, macular, non pruritic lesions on the neck and chest of a young female. (20 marks)

5.2. Corneal ulcer and hypopyon of three weeks duration in a farmer. (30 marks)

5.3. Nasal obstruction, epistaxis and a polypoidal growth in the nostril of a tea factory worker. (20 marks)

5.4. Candidaemia in a patient in the ICU. (30 marks)

6.

6.1. Name five tape worms known to cause human infections. (20 marks)

6.2. Describe the laboratory diagnosis of the above mentioned worms. Illustrate your answer with labelled diagrams. (80 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

POSTGRADUATE DIPLOMA IN MEDICAL MICROBIOLOGY EXAMINATION
OCTOBER 2011

Date : 17th October 2011 Time : 1.00 p.m. – 4.00 p.m.

ESSAY PAPER

Answer all 6 questions.
Answer each question in a separate book.

1. Write on

    1.1. details of action of three antibiotics that inhibit bacterial protein synthesis indicating clinical uses for each of them. (30 marks)

    1.2. laboratory identification of enterococcus species. (35 marks)

    1.3. pathogenesis of *Haemophilus influenzae* infection. (35 marks)

2.

    2.1. Compare and contrast the Clinical and Laboratory Standards Institute (CLSI) method and Stokes method of antibiotic sensitivity testing. (60 marks)

    2.2. Write on following media illustrating your answer with two examples for each. (40 marks)

        2.2.1. Transport media

        2.2.2. Selective differential media

        2.2.3. Enrichment media

3. Write short notes on –

3.1. Viral vaccines in the Expanded Programme of Immunization (EPI) of Sri Lanka with special reference to the vaccine type, the route of administration and vaccination schedule. (60 marks)

3.2. Laboratory diagnosis of rubella virus infection. (40 marks)

4.

4.1. List five (5) barriers which prevent infectious agents from crossing the epithelium and establishing infection. (20 marks)

4.2. Explain briefly how the host immune system acts to eliminate infectious agents that have breached above barriers (80 marks)

5. Write on the following –
(Illustrate your answer with labeled diagrams where necessary)

5.1. Laboratory diagnosis of aspergillus nail infection (35 marks)

5.2. The salient features with regard to culture and microscopy that would help in the identification of three fungi that cause phaeohyphomycosis. (30 marks)

5.3. Amphotericin B (35 marks)

6.

6.1. Name two (2) parasitic infections that are targeted for elimination from Sri Lanka within the next 10 years. (10 marks)

6.2. Critically evaluate the chances of success or failure in each program designed to eliminate the infections mentioned in 6.1, indicating the challenges and/ or threats that could be expected in each case. (60 marks)

6.3. List the diagnostic methods available for each of these infections, indicating the advantages and disadvantages of each. (30 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

DIPLOMA (MEDICAL MICROBIOLOGY) EXAMINATION
DECEMBER 2012

Date : 11th December 2012 Time : 9.00 - 12.00 noon.

STRUCTURED ESSAY PAPER

Answer all 6 questions.
Answer each question in a separate book.

1.

1.1. Define Sterilization, disinfection and antisepsis. (20 marks)

1.2. Name **three** disinfectants commonly used in a hospital indicate **two** limitations for use of each disinfectant mentioned. (30 marks)

1.3. Name two equipment used in the microbiology laboratory for sterilization purposes. (10 marks)

1.4. Describe different types of tests used to assess the sterilization procedure in one of the equipment mentioned above, giving one example for each type of test. (40 marks)

2.

2.1. Name two pathogenic mycobacteria commonly causing human infection in Sri Lanka. (10 marks)

2.2. Mention the recommendation of the National TB Control Programme for collection of sputum for Ziehl-Neelsen (ZN) staining for diagnosing a TB suspect attending an OPD clinic. (30 marks)

2.3. List two advantages of each of the following (12 marks)
2.3.1. liquid culture for TB
2.3.2. Lowenstein-Jensen culture

2.4. Name three tests used to differentiate *Mycobacterium tuberculosis* from other mycobacterial species. (18 marks)

2.5. Name the method of drug sensitivity testing (DST) used in Sri Lanka for mycobacterial species and list two important factors which decide the accuracy of the DST. (30 marks)

3. Five patients (4 males and 1 female) with mild fever and macular rash of 3 days duration were reported from a factory in Ratmalana. Three patients also had suboccipital and posterior auricular lymph node enlargement.

3.1. Name the most likely viral aetiological agent responsible for this outbreak. (5 marks)

3.2. List the specimens that should be collected to arrive at an aetiological diagnosis. (10 marks)

3.3. What advice would you give regarding collection and transport of these specimens ? (15 marks)

3.4. Describe briefly the tests available at the National Reference Laboratory, MRI , for diagnosis of this infection. (30 marks)

3.5. A pregnant co=worker who is in the first trimester has been exposed to one of these patients. Describe briefly the action you would take regarding these co-worker. (30 marks)

3.6. Name **four** other viruses that commonly cause fever and macular/ maculo -papular rash of short duration. (10 marks)

4.

4.1. List the cells of the immune system. (15 marks)

4.2. Describe briefly how the T lymphocyte acts to protect the host from invading organisms. (50 marks)

4.3. List **five** factors in the history and examination which indicate that a three month old baby boy may be having a T cell defect. (25 marks)

4.4. Name **two** infectious agents that commonly cause infection in such a baby. (10 marks)

5.

5.1. Name the infections of the respiratory tract caused by *Aspergillus* species. (20 marks)

5.2. What are the predisposing factors for each of the infections stated in 5.1. (20 marks)

5.3. Describe the mycological diagnosis of the above conditions. (60 marks)

6.

6.1. Name **two** intestinal parasites (one nematode and one protozoan) that are known to commonly infect children. (10 marks)

6.2. Outline the techniques that are commonly used in the diagnosis of infection by the two parasites you named above. (50 marks)

6.3. Using the **two** parasites you named above as examples, compare and contrast the manner in which intestinal nematodes and intestinal protozoa are transmitted from one host to another. (40 marks)