

SECOND YEAR THEORY EXAM- AUGUST 2017
PAPER I -MEDICINE AND ALLIED SCIENCES

QP .CODE: 434011

Time: Three Hours

Maximum Marks: 100

INSTRUCTIONS

- The paper will be for a total of **100 Marks**.
- Answer **all** the Questions.
- The Paper has 2 parts – **Part A & Part B**.
- **Part A** will be **descriptive type questions** based on case scenarios. **(40 Marks)**
- **Part B** will have Objective type EMQs **Extended Matching Questions**. **(60 Marks)**
 - ✓ This will have 10 sets of these questions.
 - ✓ Each set will have 6 questions.
 - ✓ Each question will carry 1 mark.
 - ✓ Each set has a **theme** on the top. In each set there are **some options** given on the top followed by some **questions**. The options are lettered using the English Alphabets A, B, C, D and so on.

Example:
3. THEME -COMMON PSYCHIATRIC PROBLEMS [QUESTIONS. 3(i) – 3(vi)] (6marks)
From the options ‘A to H’ given below, choose the best answer for the questions 3(i) – 3(vi)

Options:

- A. Inj. Haloperidol
- B. Amitriptyline + counseling
- C. Tab. Chlorpromazine
- D. Tab. Trihexyphenidyl
- E. Tab. Diazepam
- F. Tab. Lithium
- G. Inj. Fluphenazine deconate
- H. Tab. Risperidone

Questions: What is your treatment option in the following cases?

- 3(i) What is the drug of choice for Acute Psychosis?
- 3(ii) What is the drug of choice for Bipolar illness?

❖ Match each question to a **single best option** and write it in your paper in the column provided like this:

❖ Each option may be used more than once. Some options may not be used at all.

| | |
|--------|--|
| 3(i) | |
| 3(ii) | |
| 3(iii) | |
| 3(iv) | |
| 3(v) | |
| 3(vi) | |

PART – A

DESCRIPTIVE QUESTIONS

(ANSWER ALL QUESTIONS)

1. Mr. Natarajan, a 30 year old labourer, presents with a history of fever with headache for the past 1 week. (Total: 20 Marks)

- A. List the possible differential diagnoses you would consider. (4 Marks)
- B. If he had cough and post nasal drip, but no additional clinical features, how would you manage him? (4 Marks)
- C. If he had a history of drowsiness, irritability and vomiting, what would be the clinical signs you would look for on examination? (4 Marks)
- D. If any of the signs you looked for in Mr. Natarajan are positive, what organisms would you suspect as being responsible? (4 Marks)
- E. If none of the clinical signs you suspect are positive, what are other conditions you could consider? (4 Marks)

2. Mrs. Kalyani is a 28 year old lady from rural Tamil Nadu. She presents with a history of tiredness, weight loss and headache. Her haemoglobin is 7.2 g/dl. (Total: 20 Marks)

- A. What is the WHO severity grading for anaemia? According to this, what would be the severity of Mrs. Kalyani's anaemia? (4 Marks)
- B. You find out Mrs. Kalyani is 3 months pregnant, and is having severe vomiting. Her oral intake has been poor. What are some of the likely causes of her anaemia? (4 Marks)
- C. If the blood counts revealed an MCV of 130. With this information, what are the possibilities you would like to consider? (4 Marks)
- D. Had the blood counts showed an MCV of 56, what would be your differential diagnosis? (4 Marks)
- E. As a family physician, what are some of the preventive strategies that can be done to tackle the problem of anaemia in pregnancy? (4 Marks)

PART – B

EXTENDED MATCHING QUESTIONS

(ANSWER ALL QUESTIONS)

1. Theme: Diagnosis of Joint Pain [Questions 1(i) – 1(vi)] (Total: 6 Marks)
From options 'A to L' given below, choose the best answers for the questions '1(i) – 1(vi)':

Options:

- | | |
|---------------------------------|---------------------------|
| A. Rheumatoid Arthritis | G. Enthesitis |
| B. Osteoarthritis | H. Gonococcal arthritis |
| C. Gout | I. Rheumatic Fever |
| D. Ankylosing Spondylitis | J. Polymyalgia Rheumatica |
| E. Systemic Lupus Erythematosus | K. Hypermobile Joint |
| F. Septic arthritis | L. Syphilitic Arthritis |

Questions: What is the diagnosis?

- 1(i). Mr. Rajesh, a 60 year old gentleman, comes to you with severe pain in right big toe for the past 2 months
- 1(ii). Mrs. Thangamani, a 72 year old lady, presents with severe with bilateral knee joint pain for the past 6 years. She does not have any other joint pains or stiffness.
- 1(iii). Mrs. Elizabeth, a 45 year old lady, presents with joint pains of both the knees, elbows, wrists and PIP joints
- 1(iv). 13 year old Murali was brought to the emergency unit with severe pain around left knee. Patient looks toxic and is febrile.
- 1(v). Mr. Raman, a 30 year old male, comes to you with diffuse back pain, early morning stiffness relieved by exercise
- 1(vi). Mrs. June, a 24 year old lady, comes with fever, fatigue, joint pain, facial skin rash and renal involvement.

2. Theme: Geriatrics – Diagnosis (Questions 2(i)–2(vi)) (Total: 6 Marks)

From options ‘A to K’ given below, choose the best answers for the questions ‘2 (i) – 2(vi)’:

Options:

- | | |
|------------------------|---------------------------|
| A. Urge incontinence | G. Dementia |
| B. Stress incontinence | H. Atrophic vaginitis |
| C. Osteoporosis | I. Delirium |
| D. Osteoarthritis | J. Decreased testosterone |
| E. Presbyopia | K. Parkinsonism |
| F. Presbycusis | |

Questions: What is the diagnosis?

- 2(i). Mr. Raju, 67 year old, is a retired doctor. Over the past few years, he has stopped responding when his name is called unless he is shouted at, and frequently does not answer questions asked to him in conversation. Worried about his behavior, his son takes him to see a psychiatrist, but is told he does not have any psychiatric issues. What could be his likely diagnosis?
- 2(ii). Mrs. Krishnan, a 75 year old, has a history of severe joint pains, limping and frequent falls.
- 2(iii). Mrs. Anna, an 87 year old lady, presents with urinary incontinence which occurs while at sleep (2 or 3 AM). She also leaks 3-4 times during the day. The post void volume is 20ml. What does she have?
- 2(iv). 84 year old Savithri had a trivial fall in the house last month and sustained a fracture neck of femur which required surgery. What is she likely to have?
- 2(v). Mrs. Kala, a 60 year old post-menopausal woman, complains of dyspareunia and dysuria. What is she likely to have?
- 2(vi). 72 year old Mr. Rangasamy presents with resting tremor, rigidity, bradykinesia, postural instability and cognitive impairment.

3. Theme: Treatment of Common Skin Infections (Questions 3(i)–3(vi))

(Total: 6 Marks)

From options 'A to L' given below, choose the best answers for the questions '3(i) – 3(vi)':

Options:

- | | |
|---|-----------------------------------|
| A. Systemic antifungals | G. Topical tretinoin 1% |
| B. Cryotherapy with liquid nitrogen/ CO ₂ | H. 20% salicylic acid |
| C. Permethrin | I. Clindamycin |
| D. Acyclovir | J. Coal Tar |
| E. Topical antifungals | K. Anti-streptococcal antibiotics |
| F. Amitriptyline | L. Anti-pseudomonas antibiotics |

Questions: What would be the best treatment for each of these skin conditions?

3(i). Mr. Thomas presented with a history of itching in his hands and feet for two weeks, and has been diagnosed with scabies.

3(ii). Mrs. Kripa had a history of painful genital blisters that burst into ulcers over two weeks. You diagnose her as having Herpes Simplex infection.

3(iii). Mr. Dinesh's left big toenail started becoming brittle and parts of it chipped off. There was yellowish discoloration of the nail bed and foul smell. He was diagnosed as having tinea unguum.

3(iv). Mr. Chouhan has several coarse warts over both his feet.

3(v). Ms. Kalpana has a red, circular, itchy, scaly rash on her chest. You have diagnosed her with dermatophytosis

3(vi). Mr. Raghu has painful, itchy lesions forming yellowish crusts near his mouth. You diagnose him with impetigo.

4. Theme: Tests for HIV [(QUESTIONS 4 (i) To 4 (vi)]

(Total: 6 Marks)

From options 'A to I' given below, choose the best answers for the questions '4 (i) to 4 (vi)':

Options:

- | | |
|---------------------------|----------------------|
| A. ELISA | F. Urine test |
| B. Salivary test | G. MBC culture |
| C. Particle Agglutination | H. DNA PCR assay |
| D. Western blot | I. HIV RNA detection |
| E. P24 assay | |

Questions: Choose from the options given above, the answers for the questions related to tests for HIV given below

4(i). Mr. Harish is suspected to have HIV, and you want to use a test that is useful during early stage of disease.

4(ii). There are some unreliable reports from a small uncertified laboratory stating that Ms. Saradha has HIV. You want to clarify this using this confirmatory test.

4 (iii). This test is used in microtitre plate format.

4(iv). You need to perform an emergency laparotomy on Ms. Shanthi. She is brought by some friends, and she has a history of iv drug abuse. You want to perform a rapid test for HIV before the procedure.

4(v). Mr. Ramanathan has been referred to a voluntary test counseling centre, but does not want to give a blood sample. Which non-serological test can be offered?

4 (vi). This is a readily available and inexpensive test. Sensitivity and specificity > 99.9%.

5. Theme: Chest X-ray Findings [Questions 5 (i) To 5 (vi)] (Total: 6 Marks)

From options 'A to I' given below, choose the best answers for the questions '5 (i) to 5(vi)':

Options:

- | | |
|------------------------|----------------------|
| A. Pneumo thorax | F. Pleural effusion |
| B. Pulmonary fibrosis | G. Lung abscess |
| C. Tuberculous cavity | H. Bronchiectasis |
| D. normal x-ray | I. Broncho pneumonia |
| E. Hydro pneumo thorax | |

Questions: Choose the correct diagnosis from the above options for each of the X-ray findings given below:

5(i). Homogenous opacity in the left lower zone with 'Ellis curve' pattern

5(ii). Homogenous opacity with the straight upper border

5(iii). Hypertranslucent lung with absent normal broncho-vascular markings; mediastinal shift to the contra lateral side

5(iv). Bilateral diffuse reticulo nodular pattern

5(v). Lungs with normal landmarks and translucency bilaterally

5(vi). Translucent area within the lung parenchyma, with irregular margins that is surrounded by an area of nodular or fibrotic densities

6. Theme: Bleeding Disorders [Questions 6 (i) To 6 (vi)] (Total: 6 Marks)

From options 'A to L' given below, choose the best answers for the questions '6(i) to 6(vi)':

Options:

- | | |
|---|-------------------------------|
| A. Drug induced Thrombocytopenia | G. Clotting Factor Deficiency |
| B. Aplastic Anemia | H. Henoch Schonlein Purpura |
| C. Von Willibrand Disease | I. Vitamin K deficiency |
| D. Coagulaopathy | J. Intracranial bleeding |
| E. Idiopathic Thrombocytopenic Purpura | K. Hemophilia A |
| F. Hemophilia B | L. Subdural Hematoma |

Questions:

6(i). Mr. Daniel is a known case of Rheumatic heart disease with atrial fibrillation on oral anticoagulation with Warfarin 6 mg once daily. He has come to your clinic with sudden onset of severe headache and vomiting since morning. What could be the one dangerous cause for headache that should be ruled out?

6(ii). 34 year old Mr. Kaushal was diagnosed to have pulmonary tuberculosis and started on ATT, cat I last week. He had taken three doses of the medications. He has come with epistaxis and purpuric rash over chest and extremities. His platelet count is 54,000/ mm³. There is no past history of similar episodes. What could be the cause of his bleeding problem?

6(iii). 30 year old Mrs. Bharathi is a housewife, mother of two children. She was well two days ago and has developed a generalized purpuric rash and heavy menstrual blood loss since yesterday. She is otherwise healthy. There was no past history of abnormal bleeding. There was no pallor, lymphadenopathy or hepatosplenomegaly. Her platelet count is 59,000 / dl. What could be the cause of her bleeding problem?

6(iv). 50 year old Mr. Krishnan presents with bleeding gums of two days duration. He complains of ongoing tiredness and lethargy for the past one month for which he did not seek help. He looks pale. His liver is palpable 6 cm below the right costal margin and spleen is palpable 4 cm below the left costal margin. His investigations: Hb 3.9 gm; Platelet count 32,000 / mm³; WBC count 2,400 cells/ mm³. What is the likely diagnosis?

6(v) . 7 year old Krishnan has come with black eye and ecchymoses over the right eye after a trivial fall while playing. Father is worried as the swelling continues to increase. His siblings have been diagnosed to have a bleeding diathesis. General examination is normal. His platelet count is 2, 70,000/ mm³. Bleeding time is > 20 minutes. Clotting time and prothrombin time are normal. What could be the cause of his bleeding problem?

6(vi). Pushpa, a 15 year old student, has developed abdominal pain since morning. Her mother noticed a rash over the extremities, back and buttocks. Her physical exam was otherwise normal except the rash and arthritis of right knee. The purpura is raised above the skin and palpable. Platelet count is 2, 40,000 / mm³. Bleeding time is normal. Urine albumin 2+, microscopy showed numerous RBCs. What is the diagnosis?

7. Theme: Toxidromes [(Questions 7 (i) To 7 (vi)] (Total: 6 Marks)
From options 'A to J' given below, choose the best answers for the questions '7(i) to 7(vi)':

Options:

- | | |
|---|---|
| A. Anticholinergic Syndrome | F. Substance Withdrawal Syndrome |
| B. Cholinergic muscarinic Syndrome | G. Benzodiazepine overdose |
| C. Cholinergic nicotinic Syndrome | H. Paracetamol overdose |
| D. Opioid Syndrome | I. Steroid overdose |
| E. Sympathomimetic Syndrome | J. Alcohol toxicity |

Questions: Choose the correct Toxidrome from the above options for each of the patient descriptions given below:

7(i). Mr. Philip, a farmer, is brought to you with history of having consumed poison. On examination, he has miosis, bronchorrhea, bradycardia, and SLUDGE (Salivation, Lacrimation, Urination, Defecation, GI Cramps and Emesis).

7(ii). Mr. Lucas is an athlete but has been addicted to drugs on and off. He is brought to you after an all-night party after their team won the championship at a national meet held in your city. On examination, he is agitated, has dilated pupils, BP 160/100, Pulse 110/minute and his Temperature is 99.2° F.

7(iii). Mrs. Swapna, a staff nurse, a known patient of MDP (Maniac Depressive Psychosis) is in a depressive phase now. She had taken an overdose of a restricted drug and is presenting to you with sedation, miosis, hypoventilation, hypotension and hypothermia.

7(iv). Shyam a 10th grade student, was depressed when he failed his board exams and had consumed 10 of the tablets that his father was taking for his seizure disorder, about 12 hours ago. Now he is brought now with agitation, tachycardia and diaphoresis.

7(v). Mary, a 6 year old girl, consumed some mushrooms from the field and is now delirious, mydriatic and hyperthermic.

7(vi). While studying for exams, Martha took some tablets offered by her friend to enhance her memory! She is now brought to you with agitation and on examination has dilated pupils, BP 160/100, Pulse 110/minute and his Temperature is 99.2° F.

8. Theme: Palliative Care [(Questions 8 (i) To 8 (vi)] (Total: 6 Marks)

From options ‘A to G’ given below, choose the best answers for the questions ‘8(i) to 8(vi)’:

Options:

A. By the mouth

B. By the clock

C. By the ladder

D. By the individual

E. By the doctor

F. By the caregiver

G. By the regimen

Questions:

8(i). Mr. Cherian has cancer of the larynx and was treated with surgery and radiotherapy. He has managed his own tracheostomy for 2 years without difficulty. He has recently been diagnosed with recurrence and was referred to the local pain and palliative care clinic for management of his difficult pain. The pain is well controlled but his brother is unhappy that he is taking morphine 10mg q4hourly. He has told Varghese morphine is a dangerous drug that will ‘leave you as an addict’ and should only be used when necessary. So Varghese wants injections. You explain to him that the oral route is best. Which principle of pain management are you following?

8(ii). David has cancer of the buccal mucosa. He has pain in his jaw with a shooting pain that radiates into his left ear. He has been taking Proxyvon (paracetamol and dextropoxyphene) one or two times a day but the pain is not controlled. Which principle of pain management would help Vijay?

8(iii). Sita has diabetes with several complications including partial blindness, hypertension, a small stroke and non-healing foot ulcers. She is looked after at home by her daughter-in-law. Her diabetes is under reasonable control now but she is complaining bitterly about pain in her feet. Initially you had put her on paracetamol and amitriptyline, then you had added a mild opioid analgesic. Now you plan to upscale it to a stronger opioid. Which principle of pain management are you following?

8(iv). Mr. Naik, a labourer from rural Bihar as well as Mr. Nair, a financier from Kerala, both patients with the same stage of lung malignancy are both being discharged from your ward. You prescribe morphine for Mr. Nair but another opioid for Mr. Naik. This is because you are following this principle of pain management:

8(v). A patient with cancer pain due to bone secondaries has only minimal relief from dextropoxyphene and paracetamol combination taken as required. You change the prescription to 2 tabs q6h and add diclofenac 50mg q8h. He comes to you after 2 weeks and you find that the pain is still not controlled. Now you change to oral morphine 5mg q6h and 5mg for ‘breakthrough’ and continue diclofenac 50mg q8h, adding bisacodyl 2-4 tabs to prevent constipation. Which principle of pain management are you following?

8(vi). The WHO has prescribed guidelines for this principle of pain management.

9. Theme – Diabetic Neuropathy [Questions. 9(i) – 9(vi)] (Total: 6 Marks)

From the options ‘A to I’ given below, choose the best answer for the questions 9(i) – 9(vi)

Options:

- | | |
|----------------------------|----------------------------|
| A. Generalized neuropathy | F. Autonomic neuropathy |
| B. Sub clinical neuropathy | G. Mononeuropathy |
| C. Proximal neuropathy | H. Auto-immune neuropathy |
| D. Large fibre neuropathy | I. Post-herpetic neuralgia |
| E. Small fibre neuropathy | |

Questions: What type of neuropathy is described in each of the scenarios?

9(i). Mr. Selvan, a 40 year old Teacher and a diabetic for 5 years has come for his annual screening. On examination you find that his touch and vibration sense is impaired. However, he has no symptoms. He says that he feels absolutely fine.

9(ii). Mrs. Radhika, a 50 year old house wife and a diabetic for 10 years has come with small muscle wasting and deformity of toes and fingers. In addition, there is impaired vibration sense, depressed tendon reflexes and sensory ataxia.

9(iii). Mr. Sampath, a 63 year old retired bus driver and a diabetic for 12 years has come with complaints of burning, superficial pain of both lower limbs and hyperesthesia. On examination, there is a small ulcer in the big toe.

9(iv). 68 year old Mrs. Leela is a diabetic for almost 20 years now. She has come with complaints of pain in both the thighs. She tells you that in the beginning, she had pain only in the right thigh but now she is having pain in both the thighs. She is quite worried because she found that she is not able to rise from sitting position without help for the past two weeks.

9(v). Mr. Kirubakaran is 40 years old and he is diagnosed to have diabetes when he was 30 years old. Today he has come with complaints of double vision and blurred vision. On examination, there is ptosis and divergent squint. Pupillary reaction is normal and equal in both the eyes.

9(vi). 52 year old Mrs. Saramma has come with complaints of nocturnal diarrhea. She has been a diabetic for the past 10 years. She very reluctantly tells you there these nocturnal stools are often accompanied by urgency and incontinence of stools. On examination, resting pulse rate is 100/ minute. Her supine blood pressure is 130/ 90 mm of hg and blood pressure on standing is 100/ 80 mm of hg.

10. Theme: CNS disorders in the elderly [(Questions 10(i) - 10(vi)] (Total: 6 Marks)

From options ‘A to O’ given below, choose the best answers for the questions 10(i)

To 10(vi):

Options:

- | | |
|------------------------------------|----------------------------|
| A. Delirium | I. Stroke in evolution |
| B. Alzheimers’s dementia | J. Parkinson’s disease |
| C. Wernicke’s encephalopathy | K. Huntington’s disease |
| D. Incontinence | L. Parkinsonism |
| E. Wilson’s disease | M. Late life depression |
| F. Multiple Sclerosis | N. Late onset psychosis |
| G. Seizure disorder | O. Age-related memory loss |
| H. Mild Cognitive Impairment (MCI) | |

Questions:

10(i). Mr. Gopal, an 80 year old otherwise healthy man developed right sided weakness for which he sought medical attention only after 48 hours. On examination, he was found to have mild right hemiparesis. What is the diagnosis of concern in this patient?

10(ii). Mr. Santosh, a 74 year old gentleman has been brought to the clinic by his family as they are concerned about overall health. The family reports that his walk and talk have changed. On exam, he has a blank facial expression and slow voluntary movements. When asked to walk, he had difficulty rising from his chair and his gait was characteristic of small, shuffling steps. What is your diagnosis?

10(iii). Mrs. Shanthi, an 84 year old lady was admitted to the hospital with severe cellulitis of the left lower limb. On day 3 of admission, she became agitated, pulled out her IV line and was trying to leave the ward. She became very angry with the nurse who tried to help her and said that she was trying to hurt her. What is the likely diagnosis?

10(iv). Mrs. Pramila, a 76 year old lady was brought to the clinic by her daughter with complaints of forgetfulness. Detailed mental status examination revealed that her answers for questions to check memory were generally correct. She looks dull however, and takes a long time to answer questions. What is her likely diagnosis?

10(v). Mr. Jonathan is a 70 year old gentleman with a history of forgetfulness for nearly 2 years, worse in the last 6 months. He has difficulty dressing, forgets directions easily and even makes mistakes while finding rooms in his house. He makes mistakes in the names of his children, and cannot remember where he keeps his money. What is his most likely diagnosis?

10(vi). Mr. Raju, 67 year old, a retired engineer was found unconscious on his bed. The housekeeper recalls she saw his entire body become tight a few minutes before he became unconscious, and his bed was wet with urine. What is his diagnosis?
