

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**POSTGRADUATE DIPLOMA IN TUBERCULOSIS & CHEST**  
**DISEASES EXAMINATION – MAY 2016**

**PAPER I**

**CASE HISTORIES**

**Date :- 4<sup>th</sup> May 2016**

**Time :- 9.00 a.m. – 11.00 a.m.**

**Index No. ....**

**All five (05) questions should be answered.**  
**All questions carry equal marks.**

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**Question 1**

A 39 year old non-smoking male is admitted with fever of 2 weeks duration with cough and haemoptysis. He has had recurrent sino-nasal symptoms including several bouts of epistaxis during the preceding 4 months. He has been on oral co-amoxyclav for one week at the time of admission. His chest radiograph shows an area of consolidation in right mid zone with evidence of early cavitation surrounded by few nodules. Peripheral blood showed a high white cell count with neutrophilia, high CRP and ESR. He was commenced on intra venous antibiotics. Since his condition did not improve, chest radiograph was repeated after 3 days which showed a new area of consolidation in left lower zone with unresolved previous changes.

- 1.1. What four (04) investigations will you do to determine infective causes of his illness? (25 marks)

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- 1.2. What is the most likely non infective cause of his illness? (25 marks)

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- 1.3. Name two (02) investigations to confirm this diagnosis? (25 marks)

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1.4. What other organs can be affected in this patient? (25 marks)

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**Question 2**

A 45 year old female without a past history of tuberculosis is commenced on anti tuberculosis treatment (ATT) for sputum positive pulmonary tuberculosis. At the end of two months of treatment her sputum became positive for Acid fast bacilli (AFB). At this point, two sputum samples were collected for AFB culture and drug sensitivity tests (DST) and same ATT was continued. At the end of three months of treatment, her sputum direct smear was negative and continuation phase of treatment was started. However sputum direct smear done at the end of 5 months of treatment became positive and the isolate of culture done at the end of two months was found to be resistant to isoniazid.

2.1. What could be the reasons for isoniazid resistance? (20 marks)

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2.2. Name five (05) investigations that would be useful in this patient before commencement of definitive treatment. (30 marks)

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2.3. What is the test which will help you to decide on next treatment regimen? (20 marks)

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2.4. Based on the result of this test explain how you decide on further treatment? (30 marks)

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Contd...../6-

Index No. ....

- 3. A 45 year old man presented with shortness of breath of two weeks duration. He also complained of nausea and loss of appetite and has lost 3 Kg in weight over the past six weeks. He was running a low grade temperature over the past seven days. He has been recently investigated and discharged on medications from a medical unit for a cough but the discharge summary was not available at this presentation.

On examination he was tachypnoeic but was not cyanosed. His sclera showed a tinge of yellowish discoloration. The air entry was reduced in right mid and lower zones and the percussion note was stony dull.

- 3.1. Give five (05) possible reasons for this clinical presentation. (30 marks)

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- 3.2. Give five (05) important questions that you would ask (with reasons) to arrive at a diagnosis. (20 marks)

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**Index No. ....**

3.3. Give six (06) investigations that will help to differentiate between the diagnoses you have considered. (30 marks)

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3.4. Write four (04) important management steps you would take to relieve his symptoms. (20 marks)

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**Question 4**

A 60 year old vegetable farmer presented coughing up five cups of fresh blood during the last 24 hours to the medical emergency department, of a teaching hospital. He gives a history of intermittent chronic dry cough for five years associated with wheezing and occasional heamoptysis. He is a known case of non-insulin dependent diabetes mellitus, well controlled on oral hypoglycemic agents. He has 20 pack year history of smoking.

4.1. Write five (05) steps in the initial management of this patient you would take at the time of admission. (25marks)

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4.2. Write three (03) possible causes for this clinical presentation. (25marks)

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Index No. ....

4.3. The chest radiograph revealed a rounded opacity with a translucency above it in the right upper zone.  
Write five (05) specific investigations to arrive at the most probable diagnosis. (25 marks)

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4.4. Write five (05) treatment options for this presentation. (25 marks)

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**Question 5**

A 24 year old patient with low grade fever loss of weight and loss of appetite of 2 months was found to be having left hila adenopathy and pulmonary infiltrate on left upper lobe of chest radiograph. The Mantoux reaction was 21 mm induration and his sputum was negative for Acid Fast bacilli .

5.1. If anti TB treatment was started, what will be the case definition?

(15 marks)

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5.2. Later if the pretreatment culture comes as positive for mycobacterium tuberculosis what will be the case definition of the patient.

(15 marks)

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5.3. If the patient stops coming for treatment after the 3<sup>rd</sup> month give two (02) steps that you would take.

(15 marks)

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5.4. If the patient is not traceable how long would you keep the file open?

(15 marks)

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5.5. If the patient returns after 6 months with positive sputum what will be the case definition?

(15 marks)

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Contd...../11-

Index No. ....

5.6. What treatment would be commenced? (10 marks)

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5.7. If you find this pre treatment culture to be resistant to Rifampicin and ethambutol what do you call this state of resistance? (15 marks)

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**POSTGRADUATE DIPLOMA IN TUBERCULOSIS & CHEST**  
**DISEASES EXAMINATION – MAY 2016**

**PAPER II**

**DATA INTERPRETATION**

**Date :- 4<sup>th</sup> May 2016**

**Time :- 1.00 p.m. – 4.00<sup>2.00</sup> p.m.**

**Index No. ....**

**All five (05) questions should be answered.**  
**All questions carry equal marks.**

Index No. ....

**Question 1**

You are called upon to see a 36 year old obese female complaining of right sided pleuritic chest pain and difficulty in breathing, while being in a surgical ward.

4 days ago she has undergone a laparoscopic cholecystectomy.

Patient is afebrile and auscultatory findings of respiratory and cardiovascular systems are normal. She is haemodynamically stable.

A chest radiograph done, a few hours ago shows "blunting of right costophrenic angle but otherwise clear lung fields.

The surgical house officer needs your advice on an Arterial Blood Gas report.

Her Arterial Blood Gas (ABG) is as follows

pH	7.49	(7.35-7.45)
Po <sub>2</sub>	7.5Kpa/57mmHg	(10-14Kpa/80 -100 mmHg)
PCo <sub>2</sub>	3.9Kpa/30mmHg	(4.5-6.0/35- 40 mmHg)
HCO <sub>3</sub> <sup>-</sup>	22 mmol/L	(22-26 mmol/L)
BE	1 mmol/L	(-2to +2 mmol/L)

1.1. What does the ABG report show? (20 marks)

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1.2. What is the likely diagnosis? (30 marks)

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Contd...../3-

**Index No. ....**

1.3. Name five (05) investigations that would help you to arrive at a diagnosis. (25 marks)

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1.4. State two (02) most important steps in management? (25 marks)

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Contd...../4-

**Question 2**

A 66 year old male with a 25 pack year history of smoking has had a recent hospital admission for "breathing difficulties", is referred to the chest clinic on discharge from hospital for "Pulmonary Rehabilitation"

He has no other co-morbidities of note; Full Blood count shows an Hb of 17 mg/dL and PCV of 56.

His Arterial Blood Gas Report (ABG) on discharge is as follows:

pH	7.38	(7.35-7.45)
P <sub>O</sub> <sub>2</sub>	7.3 kpa/56 mmHg	(10-14Kpa/80-100 mmHg)
PCO <sub>2</sub>	7.6 kpa/57.7mmHg	(4.5-6.0/35-40 mmHg)
HCO <sub>3</sub> <sup>-</sup>	31	(22-26)
BE	+5	(-2 to +2)

2.1. What does the ABG report show? (20 marks)

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2.2. Name five (05) investigations / tests you will need to review with regard to his airway disease before enrolling him in pulmonary rehabilitation program. (50 marks)

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2.3. Name three (03) parameters that would help you to decide on this patient for Long Term Oxygen Therapy (LTOT). (30 marks)

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**Question 3**

A 56 year old man who is a current smoker, with a 25 pack year history of smoking had presented to his local hospital with increasing difficulty in breathing. He was managed for an acute exacerbation of airway diseases and referred to the district chest clinic on discharge.

His records show that he has had had two infective exacerbations during last year. A recent sputum culture has shown a pure growth of pseudomonas aeruginosa

His discharge summery shows the Spiro metric report, given below

	Pre-Bronchodilator			Post-Bronchodilator		
	predicted	actual	% Predicted	Actual	%Predicted	% change
FVC (L)	4.06	1.28	31	1.34	33	5
FEV1(L)	3.43	0.75	22	0.77	23	3
FEV1/FVC (%)	84	59	70	58	69	-1

3.1. What is the complete Spirometric diagnosis? (10 marks)

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3.2. Name four (04) investigations that would help in the management of this patient? (40 marks)

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**3.3. What is your choice of inhaled medication? (10 marks)**

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**3.4. Name four (04) steps in your management of this patient that would prevent recurrent exacerbations (40 marks)**

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4. The number of reported cases of TB, in district "A" for the first quarter of the year, is given below

New smear positive	20
New smear negative	10
Retreatment	7
New Extra pulmonary TB	11

At the end of the 1<sup>st</sup> quarter, the records show a balance of the following quantities of each item in stores.

Isoniazid, Rifampicin, Ethambutol, Pyrazinamide (HREZ-28 tab/pack)

blister packs 5 packs

Isoniazid, Riampicin (HR-28-tab/pack)

blister packs 2 packs

Isoniazid Rifampicin Ethambutol (HRE-28tab/pack)

blister packs 3 packs

Streptomycin vials 3 vials

Sputum cups 44 cups

Estimate the stocks of the following items to be ordered for the second quarter

4.1. Blister packs of (HREZ -28 tbs/pack)

Mention the steps in the calculation (40 marks)

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4.2. Blister packs of (HR – 28 tbs/pack) (10 marks)

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4.3. Blister packs of (HRE – 28 tbs/pack) (10 marks)

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4.4. Streptomycin vials (10marks)

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4.5. Sputum cups mention the steps in the calculation. (30 marks)

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5. A 35 year old male presented with a right pleural effusion and right upper lobe pulmonary infiltrates . He had a diarrhea over 3 months and on examination, was found to be having oral candidiasis .

His White cell count was 2300 with 97% Neutrophils and 3% Lymphocytes.

Erythrocyte sedimentation rate was 70 mm and sputum was positive for acid fast bacilli.

5.1. What underlying co morbidity would you suspect? (25 marks)

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5.2. Name three (03) important investigations. (25 marks)

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5.3. Name three (03) important steps in the management. (25 marks)

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5.4. Name two (02) complications that would arise during treatment. (25 marks)

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