

UNIVERSITI SAINS MALAYSIA

**PEPERIKSAAN PERTAMA
PROGRAM SARJANA FARMASI
SEMESTER I 1992/93**

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FCP 551:PHARMACOTHERAPEUTICS I

(3 HOURS)

This Examination consists of **two sections**.

Section A consists of 100 multiple choice questions

Section B consists of **two (2)** long questions

Answer **ALL** questions

Answers to Section A must be entered into the scripts provided

...2/-

INDEX NUMBER: _____

SECTION A

1. Which of the following information is not found in the Physician Progress Notes section of a patient's medical chart?

..... (a) Subjective complaints of acute problem.

..... (b) Physician assessment.

..... (c) Patient's refusal to take medications.

..... (d) Vital signs.

2. Which of the following statements is true?

..... (a) Past family and social history provides clues to the pattern of genetic illness.

..... (b) A Pharmacist's drug therapy recommendations should be communicated to the appropriate health care professional only by the pharmacist.

..... (c) Patients will present with drug toxicity only when drug levels are outside the normal range.

..... (d) Subjective patient data do not assist pharmacist in identifying real and potential medical problems.

INDEX NUMBER: _____

3. Which of the following is not suitable to be included in pharmacist's plans or recommendation?

- (a) Discontinuation of drug (s)
- (b) Modification of dosage regimen
- (c) Request for the performance of Babinski's reflex
- (d) Advice against taking drugs altogether.

4. Which of the following is inappropriate regarding the utility of patients records?

- (a) Nursing Notes - assessment of signs and/or symptom of adverse effects of drugs
- (b) Review of systems - assessment of drug induced problem
- (c) Physical examination - assessment of drug response
- (d) Laboratory tests - assessment of drug bioavailability.

5. Which of the following is/are true regarding the purpose of a pharmacist problem list?

INDEX NUMBER: _____

- (i) to determine indications for drugs prescribed
- (ii) to ensure that all medical problems are being addressed to
- (iii) to determine parameters for continued monitoring of drug therapy
- (iv) to ensure that physician has ordered all the necessary laboratory tests.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

6. Which of the following is the most important component in the diagnosis of asthma ?

- (a) the detection of eosinophilia
- (b) the performance of spirometry
- (c) the taking of history
- (d) the performance of skin tests.

7. Which of the following is true regarding the typical pathophysiologic change in asthma?

- (a) excessive mucus production
- (b) bronchial hyperactivity
- (c) bronchial inflammation

INDEX NUMBER: _____

..... (d) all of the above.

8. Which of the following is the most common triggering factor for asthma exacerbation ?

..... (a) airborne pollens

..... (b) viral respiratory infections

..... (c) occupational stimuli such as animal handling

..... (d) anxiety.

9. Which of the following is true regarding the disadvantage of pulmonary function test?

..... (a) the FEV_{1.0} and PEFr are effort dependent

..... (b) the FEV_{1.0} and PEFr primarily reflex changes in the diameter of the large central airways

..... (c) although tests of flows at low volumes (FEF₂₅₋₇₅) are more sensitive to changes in smaller airways, their coefficient of variation are great and large changes are required for it to be significant

..... (d) (a), (b) and (c).

INDEX NUMBER: _____

10. Which of the following statements is true regarding asthma?

- (a) All atopic individuals will develop asthma
- (b) Asthma is an infectious disease
- (c) The allergic component can be demonstrated in 35% to 55% of asthmatic patients and this may be higher in adults
- (d) A genetic predisposition for asthma should always be considered and the mode of transmission is most likely multifactorial.

11. Which of the following is the therapeutic agent of first choice for the prevention of exercise-induced asthma?

- (a) oral theophylline
- (b) inhalation Cromolyn^R
- (c) inhalation β_2 -agonist
- (d) inhalation ipratropium.

12. Which of the following is the most common cause of asthma deaths?

- (a) delay in seeking medical attention.

INDEX NUMBER: _____

- (b) Cromolyn^R adverse effects
- (c) overuse of β -agonist aerosols.
- (d) arrhythmia from anticholinergic aerosols.

13. Which of the following is true regarding the purpose of early steroid therapy for chronic asthma?

- (a) to regulate the pulmonary β_2 receptors
- (b) to abort the inflammatory process as steroids act faster than Cromolyn^R
- (c) to decrease bronchial hyperactivity
- (d) to facilitate the tapering of theophylline dose.

14. How long should the breath be held when using metered-dose inhalers?

- (a) 5 seconds
- (b) 10 seconds
- (c) 20 seconds
- (d) 30 seconds.

15. Which of the following statements is true regarding steroid therapy in severe chronic

INDEX NUMBER: _____
asthma ?

- (a) Adrenal suppression from inhaled beclomethasone dipropionate (800 µg/day) is comparable to that from 30 mg of oral prednisolone.
- (b) Aerosol corticosteroids are effective in acute asthma attacks
- (c) Daily aerosol corticosteroid administration produces greater control compared to alternate-day corticosteroids
- (d) Inhaled budesonide is more effective compared to inhaled beclomethasone dipropionate.

16. Which of the following statements is true regarding anticholinergic therapy?

- (a) The onset is more rapid than that from sympathomimetics
- (b) A synergistic bronchodilator response is seen with β_2 adrenergics
- (c) It is more useful compared to β_2 adrenergics in chronic bronchitis and emphysema
- (d) It is generally more effective against

INDEX NUMBER: _____

bronchospasm induced by histamine,
prostaglandin, irritant, antigen, cold
air, and exercise.

17. Which of the following parameters is appropriate
for monitoring β_2 agonist therapy?

- (a) Serum potassium
- (b) Assessment of tremor
- (c) Assessment of confusional state
- (d) Assessment of state of agitation.

18. Which of the following is the antihypertensive
agent of choice in patients with hypertension and
exercise-induced asthma ?

- (a) enalapril
- (b) prazosin
- (c) nifedipine
- (d) methyldopa.

19. Which of the following explains the
unpredictable physiological response to drugs in the
elderly?

- (a) polypharmacy

INDEX NUMBER: _____

- (b) poor nutritional status
- (c) the interaction of primary, secondary, and tertiary age changes
- (d) drug-drug interactions.

20. Which of the following is true regarding the reasons for the increase in the hazard of antihypertensive drugs in the elderly?

- (a) the change in cardiac index with age
- (b) the diminished adaptation of the heart to stress
- (c) the decline in plasma renin and aldosterone levels
- (d) the altered baroreceptor function.

21. Which of the following constitute(s) age-related changes in β receptors?

- (i) Decreased receptor response
- (ii) Decreased receptor number
- (iii) Decreased receptor sensitivity
- (iv) Increased receptor response.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only

INDEX NUMBER: _____

..... (d) (iv) only.

22. Which of the following is/are true regarding altered drug disposition in the elderly?

- (i) The rate and extent of drug absorption are usually not altered
- (ii) There is altered drug delivery to tissues
- (iii) There is altered enzyme activity and inducibility
- (iv) There is a decrease in the volume of distribution (V_d) for fat soluble drugs.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

...12/-

INDEX NUMBER: _____

23. Which of the following statements is/are true regarding cardiovascular changes in the elderly?

- (i) There is sinus node and atrioventricular node dysfunction
- (ii) There is an increased response to catecholamine
- (iii) There is a loss of vessel elasticity and distensibility
- (iv) There is a low peripheral resistance.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

24. Which of the following drugs requires special attention when used in an elderly person who manifests reduced baroreceptor sensitivity?

- (a) aspirin
- (b) catecholamines
- (c) thyroid
- (d) psychotropics.

25. Which of the following is/are indication(s) for antihypertensive medications in the elderly?

INDEX NUMBER: _____

- (i) males with uncomplicated asymptomatic diastolic pressure greater than 100 mm Hg
- (ii) females with a systolic blood pressure greater than 160 mm Hg and a diastolic pressure less than 90 mm Hg
- (iii) patients with symptoms that may be related to or aggravated by the increased blood pressure
- (iv) females with uncomplicated asymptomatic diastolic pressure greater than 100 mm Hg.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

26. Which of the following statements is/are true regarding drug therapy in the elderly ?

- (i) Digitoxin kinetics is not altered
- (ii) Drugs should be given at 1/4 - 1/2 of the dose for young adults
- (iii) A problem-oriented medication list should be maintained
- (iv) Nitrates are appropriate in the treatment of heart failure regardless of the filling pressure.

- (a) (i) and (iii) only

INDEX NUMBER: _____

- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

27. Which of the following is/are associated with sodium bicarbonate overdose?

- (i) Metabolic alkalosis
- (ii) The rise in plasma pH increases cerebral vascular resistance and diminishes cerebral blood flow
- (iii) There is an increase in carbon dioxide retention
- (iv) There is an increase in plasma pH which can cause bradycardia.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

28. Which of the following is/are common cause(s) of cardiac arrest?

- (i) Myocardial infarction
- (ii) Pulmonary embolism
- (iii) Cardiac tamponade

INDEX NUMBER: _____

(iv) BP 100/60 mm Hg

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

29. Which of the following is/are the drug(s) used in asystole?

- (i) Isoproterenol
- (ii) Lidocaine
- (iii) Dopamine
- (iv) Epinephrine

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

30. Which of the following statements is/are true regarding lidocaine?

- (i) It is the drug of choice for atrial fibrillation
- (ii) The effect on myocardial contractility and blood pressure is similar to that from dopamine

INDEX NUMBER: _____

- (iii) Toxic effects usually occur when serum concentrations exceed 20 µg/ml
- (iv) Toxicity includes drowsiness, paresthesias, disorientation and muscle twitching.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

31. Which of the following is not an indication for hemodynamic monitoring?

- (a) to determine physiological status of the heart and circulation
- (b) to select specific therapeutic intervention (e.g. inotropic, vasopressor and vasodilating agent)
- (c) to obtain the specific location of lung infection
- (d) to assess fluid requirement in the critically ill patient.

Question 32 to 33 is based on the following case.

A 50 years old female is admitted to the intensive care unit after undergoing a coronary artery bypass

INDEX NUMBER: _____

graft surgery. She weighs 60 kg and has an estimated surface area of 1.5 m². Her hemodynamic profile 30 minutes postoperatively is as follows:
BP 100/60/72 mm Hg; P 115 beats/minute (sinus rhythm);
CO 3.0 L/minute; CI 2.0 L/min/m²; RAP 14 mm Hg; PAD 25 mm Hg PCWP 22 mm Hg;
ABG's (FiO₂.80) : pO₂ 34, pH 7.38;
RR 12 breaths/minute;
Urine Output (U/O) 20 ml/hr; Chest tube drainage 120 ml/hr.

32. What does the profile indicate?

- (a) Hypovolemia
- (b) Severe hypotension
- (c) Excessive hemorrhage
- (d) No volume depletion

...18/-

INDEX NUMBER: _____

33. What does the cardiac index (CI) indicate?

- (a) Hypoperfusion
- (b) Pulmonary edema
- (c) Low preload
- (d) Pulmonary embolism.

34. Which of the following are not associated with an elevation of PCWP?

- (a) left ventricular failure
- (b) mitral insufficiency
- (c) decreased intravascular volume
- (d) pulmonary congestion.

35. Which of the following arrhythmias require urgent attention?

- (i) Ventricular fibrillation
- (ii) Atrial fibrillation with slow ventricular rate
- (iii) Complete heart block
- (iv) Severe hyperkalaemia with tall T-wave.

- (a) (i) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv) only
- (d) (i) and (ii) only.

INDEX NUMBER: _____

36. Which of the following antihistamines lack(s) sedative and anticholinergic properties?

- (i) Astemizole
- (ii) Triprolidine hydrochloride
- (iii) Terfenadine
- (iv) Azatadine maleate.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

37. Which of the following statements is/are true regarding corticosteroids in the treatment of allergic rhinitis?

- (i) Oral forms are free from adverse effect
- (ii) Flunisolide is used topically
- (iii) Beclomethasone dipropionate has very little topical anti-inflammatory activity
- (iv) Topical beclomethasone does not produce adrenal suppression.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only

INDEX NUMBER: _____

..... (d) (iv) only.

38. Which of the following statements is/are true?

- (i) Oxygen is contraindicated in congestive cardiac failure
- (ii) Verapamil is useful in ventricular arrhythmia
- (iii) Septic arthritis is a medical emergency
- (iv) Quinidine depresses myocardial contractility

..... (a) (i) only

..... (b) (i) and (ii) only

..... (c) (iii) and (iv) only

..... (d) (i), (iii) and (iv) only.

39. Which of the following statement is/are true?

- (i) Frusemide reduces preload
- (ii) Digoxin can cause atrial fibrillation
- (iii) Phenytoin is useful in the treatment of digoxin induced arrhythmias
- (iv) Reentrant tachycardia responds well to digoxin

..... (a) (i) only

..... (b) (i) and (ii) only

..... (c) (i), (ii) and (iii) only

..... (d) (i), (ii), (iii) and (iv).

INDEX NUMBER: _____

40. Which of the following statements is/are true?

- (i) Anemia can cause congestive cardiac failure
- (ii) Septic arthritis can complicate rheumatoid arthritis
- (iii) Amiodarone has a short half life
- (iv) Lidocaine is indicated for supra-ventricular tachycardia

- (a) (i) and (ii) only
- (b) (i) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (i), (iii) and (iv) only.

41. Reentry circuit as a mechanism for abnormal conduction in the heart can be caused by ...

- (i) ischaemia
- (ii) valvular disease
- (iii) cardiac surgery
- (iv) hypothyroidism.

- (a) (i) and (ii) only
- (b) (i) and (iii) only
- (c) (i), (ii), (iii) are (iv)
- (d) (i), (iii) and (iv) only.

INDEX NUMBER: _____

42. Paroxysmal atrial tachycardia (PAT) ...

- (i) is characterised by episodes of supra ventricular tachycardia that occur suddenly and sporadically
- (ii) has a faster rate than a flutter
- (iii) may occur in people with apparently normal heart
- (iv) is common with all kinds of heart disease.

- (a) (i) and (ii) only
- (b) (i) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (i), (iii) and (iv) only.

43. Which of the following statements is/are true?

- (i) Automaticity is the ability of cardiac cell to propagate an electrical impulse to its neighbour
- (ii) Refractoriness describes the temporary inability of a depolarised cell to be excited.
- (iii) Conductivity is the ability of cardiac cells to initiate an impulse without extrinsic stimulation
- (iv) Excitability is the ability of the cardiac cell

INDEX NUMBER: _____

to depolarise and form action potential.

- (a) (i), (ii), (iii) and (iv)
- (b) (i), (ii) and (iii) only
- (c) (i) and (ii) only
- (d) (i) only.

44. Which of the following statements is/are true?

- (i) Supra ventricular arrhythmias can originate from SA node, atria or AV node
- (ii) In heart block, electrical conduction fails to be transmitted from the atrium to the ventricle
- (iii) Pre-excitation syndromes are characterised by cardiac conduction occurring via aberrant pathways
- (iv) Sinus bradycardia usually indicates serious heart disease.

- (a) (i), (ii), (iii) and (iv)
- (b) (i), (ii) and (iii) only
- (c) (i) and (ii) only
- (d) (i) only.

45. Which of the following statements is/are true?

INDEX NUMBER: _____

- (i) Rheumatoid factor is found in the majority of patients with rheumatoid arthritis (RA)
- (ii) NSAID can alter the clinical course of RA
- (iii) There is an increased prostaglandin production in the synovium of RA patients
- (iv) In RA, prednisolone is used mainly as an anti inflammatory agent.

- (a) (i) and (ii) only
- (b) (i) and (iii) only
- (c) (i), (ii) and (iii) only
- (d) (i), (iii) and (iv) only.

46. In congestive cardiac failure

- (i) the use of digoxin is associated with reduced mortality
- (ii) an increase in pre load will reduce cardiac output
- (iii) IM absorption of drugs may be erratic
- (iv) the use of morphine is contraindicated.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iv) only
- (c) (ii) and (iii) only
- (d) (ii), (iii) and (iv) only.

47. Digoxin ...

INDEX NUMBER: _____

- (i) is useful in atrial fibrillation
- (ii) is removed by peritoneal dialysis
- (iii) increases myocardial oxygen consumption and should not be used in patients with ischaemic heart disease

(iv) reduces afterload of the heart.

- (a) (i) and (ii) only
- (b) (i), (iii) only
- (c) (i), (ii), (iii) only
- (d) (i), (ii), (iii) and (iv)

48. Isosorbide dinitrate

- (i) is active orally
- (ii) is used in congestive cardiac failure
- (iii) causes bradycardia
- (iv) is a venodilator.

- (a) (i) and (ii) only
- (b) (i), (ii), (iii) only
- (c) (i), (ii) and (iv) only
- (d) (i), (ii), (iii) and (iv) only.

49. Quinidine

INDEX NUMBER: _____

- (i) is used in ventricular arrhythmias
- (ii) can reduce digoxin clearance
- (iii) can depress myocardial contractility
- (iv) is ineffective orally.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) none of the above.

50. In pulmonary edema

- (i) morphine is used for its potent analgesic property
- (ii) aminophylline may be useful to correct bronchospasm
- (iii) nitroglycerine is contraindicated
- (iv) oral frusemide is as effective as intravenous frusemide.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) none of the above.

51. Which of the following influence(s) the choice of antihypertensive agents?

INDEX NUMBER: _____

- (i) The presence of angina pectoris
- (ii) Lipid solubility of the drugs
- (iii) The ability of the drugs to induce orthostatic hypotension
- (iv) The dosage forms.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

52. In which of the following conditions are β blockers with ISA preferred?

- (i) Second degree heart block
- (ii) Bradycardia
- (iii) Congestive heart failure
- (iv) Migraine.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

53. Which of the following statements is/are true regarding the use of sodium nitroprusside?

- (i) The initial dose should be 0.25 $\mu\text{g}/\text{kg}/\text{min}$

INDEX NUMBER: _____

(ii) The serum level of thiocyanide should be closely monitored

(iii) Sodium thiosulphate is the drug of choice in the prevention of thiocyanide toxicity

(iv) Hydroxycobalamine is the antidote of choice in the management of cyanide toxicity secondary To nitroprusside.

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv)

..... (d) (ii) and (iv) only.

54. Which of the following drugs are best avoided in the management of severe hypertension with congestive heart failure?

(i) Nitroprusside

(ii) Diazoxide

(iii)Hydralazine

(iv) Labetolol.

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv) only

..... (d) (ii) and (iv) only.

55. Which of the following is/are true regarding

INDEX NUMBER: _____

criteria for the selection of drugs in hypertensive emergencies?

- (i) Rapid onset of action
- (ii) Short duration of action
- (iii) Availability of IV formulation
- (iv) No deleterious effect on renal function.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

56. Patent ductus arteriosus

- (i) is a disease of the newborn characterised by the shunting of the blood from the right to the left heart
- (ii) is commonly treated with indomethacin
- (iii) is a congenital disease characterised by left to right shunt
- (iv) is the disease caused by the inability of the ductus arteriosus to close.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

INDEX NUMBER: _____

57. In teratology of fallot there is

- (i) left to right shunt due to septal defect and increased pulmonary resistance
- (ii) right to left shunt due to septal defect and increased pulmonary resistance
- (iii) left to right shunt due to septal defect and mitral stenosis
- (iv) right to left shunt due to septal defect and pulmonary stenosis.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

58. Rheumatic heart disease

- (i) is characterised by the presence of streptococcus throat infection
- (ii) is a valvular heart disease secondary to rheumatic fever
- (iii) commonly occurs in the elderly and the very young
- (iv) usually requires antibiotic prophylaxis for recurrent attacks.

INDEX NUMBER: _____

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

59. In ventricular septal defect

- (i) the left to right shunt is usually not associated with the blue baby syndrome
- (ii) the right to left shunt is usually associated with the blue baby syndrome
- (iii) endocarditis is common with a large septal defect
- (iv) deoxygenated blood in systemic circulation is commonly increased in left to right shunt.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

60. Congestive heart failure secondary to ventricular septal defect

- (i) is best treated with diuretics
- (ii) is best treated with digoxin
- (iii) can be avoided by complete rest in bed

INDEX NUMBER: _____

(iv) requiring surgery is best operated on before the age of 5 years.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

61. Neonatal apnea is

- (i) characterised by sudden cessation of respiration for more than 20 seconds
- (ii) best treated with caffeine or theophylline
- (iii) improved with increased humidity
- (iv) prevented by administration of steroid to the mother prior to delivery.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

62. Which of the following statements is/are true regarding theophylline in the treatment of neonatal apnea?

- (i) It can be given orally or parenterally
- (ii) The serum level required is lower compared to

INDEX NUMBER: _____

that required for asthma

- (iii) The dose should be reduced when it is co-administered with cimetidine
- (iv) The volume distribution (V_d) in neonates with apnea is lower compared to V_d for adults.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

63. Respiratory distress syndrome in children is

.....

- (i) also known as hyaline membrane disease
- (ii) characterised by a lack of surfactant
- (iii) prevented by the ante-natal steroid
- (iv) more common in premature babies.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

64. Pediatric wheezing

- (i) is also known as asthma
- (ii) is due to bronchoconstriction

INDEX NUMBER: _____

(iii) is commonly treated with steroid inhaler

(iv) may also be contributed to by mucous plugs.

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv)

..... (d) (ii) and (iv) only.

65. Which of the following statements is/are true regarding pediatric asthma?

(i) It is commonly treated with beta agonists

(ii) Oral drugs are preferred to inhalation therapy

(iii) Allergy is the most common cause

(iv) The diffusion of oxygen is not compromised.

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv)

..... (d) (ii) and (iv) only.

66. Which of the following is/are true regarding the treatment of status asthmaticus?

(i) steroid should be given early if it is required

INDEX NUMBER: _____

- (ii) IV preparation is preferred to inhalation therapy for the initial treatment
- (iii) oxygen 100% may be used to correct acid base abnormality
- (iv) hypotonic infusion should be given to correct the fluid and electrolyte imbalance.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

67. Which of the following statements is/are true regarding the use of ipratopium bromide in the management of acute asthma?

- (i) Intravenous preparation has a faster onset compared to oral preparation
- (ii) Its combination with β stimulant will give superior effects
- (iii) Its absorption from inhalation is rapid and complete
- (iv) It is commonly used in patients who fail or are intolerant to β_2 -agonist.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)

INDEX NUMBER: _____

..... (d) (ii) and (iv) only.

68. Which of the following statements is/are true regarding the use of steroid in asthma?

- (i) It is the drug of choice in status asthmaticus in children
- (ii) Inhalation is preferred to oral therapy for the management of chronic asthma
- (iii) An IV loading dose is required in the status asthmaticus
- (iv) Chronic use of oral steroid is usually associated with the suppression of hypothalamus pituitary axis (HPA).

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv)

..... (d) (ii) and (iv) only.

69. Functional residual capacity

- (i) is the volume of gas remaining in the lungs at resting respiratory level
- (ii) is equal to the total lung capacity minus inspiratory capacity
- (iii) is the maximum volume of gas that can be

INDEX NUMBER: _____

expelled from the lung

(iv) is the volume of gas remaining in the lung at the end of maximal expiration.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

70. Airways obstruction causes

- (i) a reduction in FEF 25 - 75
- (ii) a reduction in FEV_{I.0}
- (iii) a reduction in the time for FEF 200-1200
- (iv) an increase in the peak flow rate.

- (a) (i) and (ii) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (ii) and (iv) only.

71. In which of the following is prophylaxis recommended for endocarditis?

- (i) in patients with prosthetic valves who undergo dental procedures
- (ii) in patients with previous endocarditis

INDEX NUMBER: _____

requiring bronchoscopy

(iii) in patients with valvular heart disease
requiring endotracheal intubation

(iv) in patients with mitral valve prolapse
requiring endoscopy.

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv)

..... (d) (ii) and (iv) only.

72. Which of the following drugs are used in the
management of teratology of fallot?

(i) β -blockers

(ii) diamorphine

(iii) digoxin

(iv) captopril.

..... (a) (i) and (ii) only

..... (b) (i), (ii) and (iii) only

..... (c) (i), (ii), (iii) and (iv)

..... (d) (ii) and (iv) only.

73. Which of the following are implicated in
asbestos related human morbidity?

INDEX NUMBER: _____

- (i) Working on construction sites
- (ii) Household exposure of spouses of asbestos workers
- (iii) Asbestos mining
- (iv) Drinking of asbestos-contaminated water.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

74. Which of the following is the most carcinogenic asbestos?

- (i) tremolite
- (ii) amosite
- (iii) chrysotile
- (iv) crocidolite.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

75. Which of the following is/are present in silicosis but not in asbestosis?

- (i) Prominent granulomatous lung response

INDEX NUMBER: _____

- (ii) Increased risk for malignancy
- (iii) Increased susceptibility to mycobacterium infection
- (iv) Extensive damage to lung parenchyma.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

76. Which of the following is used as a specific treatment for silicosis?

- (a) Corticosteroid
- (b) Bronchodilators
- (c) Diuretics
- (d) Antibiotics.

77. In tricyclic antidepressant (TCA) overdose, cardiac arrest and death is most prominent within the first

- (a) 12 hours
- (b) 24 hours
- (c) 36 hours
- (d) 48 hours.

78. Which of the following is/are contraindicated in the treatment of TCA overdose?

INDEX NUMBER: _____

- (i) Quinidine
- (ii) Phenytoin
- (iii) Procainamide
- (iv) Lidocaine.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

79. Which of the following statements is/are true in a severe attack of bronchial asthma?

- (i) I.V. aminophylline is contraindicated if the patient has been on theophylline tablets.
- (ii) Steroid therapy is not helpful.
- (iii) Increasing hypercapnea is a good sign.
- (iv) Close serum drug level monitoring is important

- (a) (i) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv) only
- (d) (i) and (ii) only.

80. Which of the following TCA would be preferred in patients with bradyarrhythmia?

INDEX NUMBER: _____

..... (c) (i), (ii) and (iii) only

..... (d) (iv) only.

81. Which of the following conditions predispose(s) patient to digitalis-induced arrhythmia?

(i) Hyperkalaemia

(ii) Hypercalcemia

(iii) Hyperuricemia

(iv) Hypomagnesemia.

..... (a) (i) and (iii) only

..... (b) (ii) and (iv) only

..... (c) (i), (ii) and (iii) only

..... (d) (iv) only.

82. Which of the following is the commonest type of digitalis induced ventricular arrhythmia?

..... (a) ectopic beats

..... (b) tachycardia

..... (c) fibrillation

..... (d) bradycardia.

83. Which of the following antiarrhythmics should be avoided in the treatment of digoxin-induced arrhythmia since it could increase digoxin serum

INDEX NUMBER: _____

level?

- (i) Phenytoin
- (ii) Procainamide
- (iii) Lidocaine
- (iv) Quinidine.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

84. The maximum total cumulative dose of adriamycin in a 40 year old patient who has had prior mediastinal area radiation is

- (a) 550 mg/m²
- (b) 500 mg/m²
- (c) 450 mg/m²
- (d) 400 mg/m².

85. Which of the following is the most important risk factor, apart from age, that increases the risk of myocardial infarction in current oral contraceptive users?

- (a) hypertension
- (b) diabetes mellitus

INDEX NUMBER: _____

- (c) family history of ischaemic heart disease
- (d) smoking.

86. Which of the following mechanism is/are involved in bleomycin-induced fibrosis?

- (i) Increased collagen deposition
- (ii) Induction of pulmonary inflammatory reaction
- (iii) Generation of superoxide anions
- (iv) Inhibition of glutathione reductase.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

87. Which of the following agents has been postulated to induce bronchospasm by causing excess production of leukotrienes C₄ and D₄?

- (i) Griseofulvin
- (ii) Histamine
- (iii) Propranolol
- (iv) Aspirin.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only

INDEX NUMBER: _____

..... (d) (iv) only.

88. Which of the following statements is/are true regarding drug-induced hypersensitivity lung disease?

- (i) It only occurs after a long drug exposure
- (ii) There is an increased number of eosinophils in blood
- (iii) Prognosis is very poor
- (iv) Chest X-rays show diffused acinar infiltrate and pleural effusion.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

89. Which of the following is/are signs of cardiac failure in children?

- (i) Excessive sweating
- (ii) Bradycardia
- (iii) Paroxysmal nocturnal dyspnoea
- (iv) Hepatomegaly.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only

INDEX NUMBER: _____

- (c) (i), (ii) and (iii) only
- (d) (iv) only.

90. Which of the following statements is/are true regarding cardiac perfusion?

- (i) Calcium channel blockers improve cardiac perfusion
- (ii) Poor perfusion leads to accumulation of lactic acid in the myocardium
- (iii) It is reduced in anemic state
- (iv) It is increased polycythaemia.

- (a) (i) and (iii) only
- (b) (ii) and (iv) only
- (c) (i), (ii) and (iii) only
- (d) (iv) only.

91. Which of the following conditions lead(s) to acute respiratory failure?

- (i) bronchial asthma
- (ii) multiple trauma
- (iii) drug overdose
- (iv) adult respiratory distress syndrome.

- (a) (i) only
- (b) (i), (ii) and (iii) only

INDEX NUMBER: _____

- (c) (i), (ii), (iii) and (iv)
- (d) (i) and (ii) only.

92. Which of the following is associated with acute respiratory failure?

- (i) alveolar hypoventilation
- (ii) intrapulmonary venoarterial shunt
- (iii) diffusion impairment
- (iv) ventilation-perfusion imbalance.

- (a) (i) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (i) and (ii) only.

93. Which of the following is/are the signs and symptom of respiratory failure?

- (i) Dyspnoea
- (ii) Restlessness
- (iii) Cyanosis
- (iv) Cardiac arrhythmias.

- (a) (i) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (i) and (ii) only.

INDEX NUMBER: _____

94. Which of the following statements is/are true regarding therapy for a severe attack of bronchial asthma?

- (i) I.V. aminophylline is contraindicated if the patient has been on theophylline tablets
- (ii) Steroid therapy is not helpful
- (iii) Increasing hypercapnea is a good sign
- (iv) Close serum drug level monitoring is important.

- (a) (i) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (i) and (ii) only.

95. Which of the following statements is/are true?

- (i) Oxygen content in the blood falls in anemia
- (ii) The more acidic the blood is the more readily haemoglobin gives up its oxygen to the tissues
- (iii) Low 2,3-DPG as in stored blood will shift the oxyhaemoglobin curve to the left
- (iv) Shifting of the oxyhaemoglobin dissociation curve to the left will deliver more oxygen to the tissue.

- (a) (i) only

INDEX NUMBER: _____

- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv)
- (d) (i) and (ii) only.

96. Which of the following is/are symptoms and signs of hypovolemic shock?

- (i) Low central venous pressure
- (ii) Thirst
- (iii) Reduced urine output
- (iv) Bradycardia

- (a) (i) only
- (b) (i), (ii) and (iii) only
- (c) (i), (ii), (iii) and (iv) only
- (d) (i) and (ii) only

97. Which of the following statements is true regarding dopamine?

- (a) Low doses increase renal perfusion
- (b) Its action is potentiated by metabolic acidosis
- (c) It causes hypotension

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INDEX NUMBER: _____

..... (d) It is effective in hypovolemia

98. Which of the following statements regarding congestive cardiac failure is true?

..... (a) It can lead to hyponatremia

..... (b) It commonly causes hypertension

..... (c) It usually involves only one side of the heart

..... (d) The most prominent feature is facial edema

99. Which of the following statements is true regarding the use of thiazide?

..... (a) It causes less hypokalemia compared to frusemide

..... (b) It is not useful in congestive cardiac failure

..... (c) It can precipitate gouty arthritis

..... (d) High doses are required when creatinine

INDEX NUMBER: _____

clearance is less than 30 ml/min

100. Which of the following statements is true regarding nitrate therapy?

- (a) It is contraindicated in congestive cardiac failure
- (b) Tolerance develops after prolonged use
- (c) It is useful in cardiac failure secondary to hypovolemia
- (d) It reduces renal perfusion
cardiac failure
- (c) They cause hypertension in congestive cardiac failure

(50 marks)

...52/-

SECTION (B)

1. A 64 year old Malay man was admitted to HUSM with the complains of :

- i) shortness of breath X 2/7
- ii) orthopnoea X 1/7
- iii) paroxysmal nocturnal dyspnoea X 1/7 1
- iv) cough with purulent sputum X 4/7 1 v) fever with chills X 5/7
- vi) bilateral ankle edema X 3/7 Past Medical

History:

Hypertension X 10 years
 Congestive cardiac failure X 5 years
 Chronic obstructive airway disease X 10 years.

Medication History :

<u>Drug</u>	<u>Date started</u>
Propranolol 80 mg TDS PO	1982
Chlorothiazide 500 mg OM PO	1985
Potassium Chloride 1200 mg OM PO	1990
Theophylline 125 mg TDS PO	1982
Salbutamol inhaler II puffs PRN	1989
Digoxin 0.25 mg OM PO	1990

Physical examination:

Unremarkable except for bilateral basal

crepitations, elevated JVP and 2+ pitting edema.

BP: 160/100 mm Hg; Pulse: 100/min

Temperature: 37.7°C

Heart : S₁S₂ and 3rd heart sound heard.

Assessment :

- 1) Congestive cardiac failure - decompensated
- 2) Chronic obstructive airway disease - exacerbation

(A) Discuss the appropriateness of the drugs listed. Discuss also the possible roles of the drugs in the acute exacerbation.

(10 marks)

(B) Describe the guiding principles in choosing an appropriate therapy for the acute problems in this patient and formulate a therapeutic plan giving your rationale.

(10 marks)

(C) For your therapeutic plan in (B), list FIVE monitoring parameters.

(5 marks)

2. A 25 kg 8 year-old boy was admitted to Hospital USM for fever, difficulty in breathing and wheezing since 3/7.

History of Present Illness:

The patient was admitted earlier this month for asthma and discharged with:

Ventolin^R rotahaler 2 puff p.r.n.

Neulin^R 250 mg BD.

Three days prior to admission the patient developed fever, difficulty in breathing and wheezing which initially responded to the inhaler. On the morning of admission however, the condition deteriorated and the difficulty in breathing persisted despite of the inhaler.

Past Medical History:

Bronchial Asthma since age of 5 years.

Medication History:

Ventolin^R syrup 5 ml t.d.s

Beclotide^R rotahaler 2 puff q.i.d.

Neulin^R tablet 250 mg BD.

Compliance was rated as poor.

History of allergies:

Not known .

Social History :

Second of 6 sibling : the father is a farmer and the mother a housewife.

Pharmacological Review of System : General: Pale and dyspnoeic

Vital Sign : BP 120/80 mm Hg, PR: 150 beats/min, RR: 48/min, T: 38° C

Chest : reduced air entry

Expansion : equal but reduced bilaterally

Auscultation : bilateral ronchi

CVS :Regular rhythm with S₁S₂, no murmur

Abdomen soft non tender; L⁰ S⁰ K⁰

Extremities : Cold fingers with fine tremors of upper extremities

Laboratory data:

Stat ABG: pH 7.2

pCO₂: 50%

pO₂: 70%

HCO₃: 30 mMol/l

BUSE: Na⁺ 145 mMol/l, K⁺ 4.5 mMol/l Urea 10 mMol/l

Glucose 10 mMol/l

Provisional Diagnosis:

Acute exacerbation of asthma with respiratory acidosis

Plan

Treatment Plan

ABG q8h

Ventolin^R Neb 1:1 q 4 H BUSE

Atrovent^R Neb 1:1 q 4 H VS q8h

IV Hydrocortisone 100 mg

stat then of 6 hourly

C & S: Blood

IV Ampicillin 700 mg q 6 H

sputum and urine

IV Aminophylline 250 mg

stat

Theophylline level

Aminophylline Infusion 0.8 stat
µg/kg/min

(A) Comment on the therapy given to this patient on admission.

(5 marks)

...57/-

(B) Twelve hours later the patient improved only slightly and the doctor on-call added ipratropium bromide to the therapy. What is the rationale for initiating ipratropium bromide in this patient?

(5 Marks)

(C) Twenty four hours later, the patient developed seizures due to the theophylline toxicity. What is your comment on the present dose of theophylline if the serum concentration on admission was 15 mg/L?

(5 marks)

(D) Three days later, his asthma was stabilised. The theophylline dose was 250 mg IV q 6 H and its serum

concentration was 18 mg/L. The decision was to change theophylline IV to oral tablet. Estimate the appropriate oral dose.

(5 Marks)

(E) Five days later his condition was back to normal and the doctor planned to discharge him. The pediatrician added Zaditen^R 1 mg BD. to his discharge medication. What is the role of Zaditen^R in the treatment of this patient?

The discharge medications include Zaditen^R 1 mg bd. Comment the role of Zaditen for this patient.

(5 Marks)

-0000000-