

Final Exam on the Whole Course

The questions signed by * are hard: read their explanation. ● Past Years ● TBL ● Others

The answer key and the explanation of every question of the final exam, from the handout.

Answer Key | Final Exam

Question no.	1	2	3	4	5	6	7	8	9	10	11	12
Answer	c	d	a	c	c	b	c	a	d	c	a	c

Question no.	13	14	15	16	17	18	19	20	21	22	23	24
Answer	a	b	a	d	b	c	b	b	b	a	c	a

Question no.	25	26	27	28	29	30	31	32	33	34	35	36
Answer	c	c	c	d	b	d	c	a	b	d	d	c

Question no.	37	38	39	40	41	42	43	44	45	46	47	48
Answer	d	a	a	c	c	b	d	c	d	c	b	c

Question no.	49	50
Answer	b	a

► Why this answer?

1 Which of the following favours cardiac asthma rather than bronchial asthma?

(c) Morphine improves the condition Lesson 1

Morphine improves cardiac asthma but is contraindicated in bronchial asthma. Cardiac asthma has inspiratory dyspnea, the patient is never free between attacks, and adrenaline is contraindicated.

2 Which of the following favours peripheral rather than central cyanosis?

(d) Cyanosis improves with warming Lesson 1

Warming improves peripheral cyanosis but has no effect on central cyanosis. Clubbing, secondary polycythaemia and low arterial PO₂ belong to central cyanosis.

3 Which of the following is not a manifestation of heart failure in children?

(a) Large volume pulse Lesson 2

In heart failure the pulse is weak because of the low COP, so a large volume pulse is not a feature. Tachycardia, oliguria and an enlarged tender liver are all features of H.F..

- 4 Causes of acute right sided heart failure are all of the following except:
(c) Malignant hypertension Lesson 2
 Malignant hypertension is systemic HPN, a pressure overload on the left ventricle. Pulm. HPN, tricuspid incompetence and right ventricular myocardial disease (the same like Lt. v., e.g. infarction) are causes of right ventricular failure.
- 5 Systemic congestive manifestations (right-sided heart failure) do not include:
(c) Bilateral basal crepitations Lesson 2
 Bilateral basal crepitations are a backwards sign of left-sided H.F., due to pulmonary congestion. Oedema of the lower limbs, ascites and pain in the Rt. hypochondrium are systemic congestion features of right-sided H.F..
- 6 Which side effect is reported with thiazides but not with loop diuretics?
(b) Hypercalcaemia Lesson 2
 Hypercalcaemia is listed only with thiazides. Hypokalaemia, hyperglycaemia and hyperuricemia are side effects of both loop diuretics and thiazides.
- 7 Dopamine infusion at a dose of 2-4 µg/kg/min acts mainly on:
(c) Dopaminergic receptors to increase renal blood flow Lesson 2
 At 2-4 µg/kg/min dopamine acts on dopaminergic receptors to increase renal blood flow. B1 receptors are reached at 5-10 µg/kg/min and alpha receptors at 10 µg/kg/min, while Na-K ATPase inhibition is the action of digitalis.
- 8 Which of the following is an absolute contraindication to digitalis?
(a) Ventricular tachycardia Lesson 2
 Ventricular tachycardia is a contraindication to digitalis for fear of changing it to V.F.. AF, atrial flutter and P.S.V.T. are indications of digitalis.
- 9 What is the recommended duration for secondary prophylaxis after rheumatic fever?
(d) At least until 40 years of age / for life in patients... Lesson 3
 Secondary prevention lasts till age 40 years or lifelong in patients with severe valvular disease or after valvular replacement. Without carditis it is till age 21 (at least 5 years) and with mild regurgitant lesion till age 25 (at least 10 years), so a, b and c mix up the groups.
- 10 What is the most commonly affected valve in rheumatic heart disease?
(c) Mitral valve Lesson 3
 Mitral valve is commonly involved, followed by aortic valve then tricuspid valve.
- 11 Which of the following is a minor criterion of acute rheumatic fever?
(a) Fever Lesson 3
 Fever is a minor criterion. Erythema marginatum and carditis are major criteria, and a raised ASO titre is evidence of recent streptococcal infection.
- 12 Which of the following is false regarding rheumatic chorea in children?
(c) Associated with hypertonia and hyperreflexia Lesson 3
 Sydenham's chorea gives hypotonia and hyporeflexia, not hypertonia and hyperreflexia. It is more common in girls over 8 years, gives emotional instability and interrupted speech, and could occur alone weeks or months after the streptococcal infection.
- 13 In the treatment of acute rheumatic fever, which of the following is correctly matched?
(a) Carditis: corticosteroids Lesson 3
 Carditis is treated with corticosteroids. Arthritis is treated with salicylates, chorea with haloperidol, and penicillin allergic patients take daily erythromycin.
- 14 In a recurrent attack of rheumatic fever, the diagnosis can be made by:
(b) 3 minor criteria + evidence of recent streptococcal... Lesson 3
 In recurrent attacks, 3 minor criteria are enough, but evidence of recent streptococcal infection is still required. One major criterion needs 2 minor criteria.

- 15 * The most common congenital cyanotic heart disease in children is:
(a) Fallot tetralogy *Lesson 4*
 The handout calls TOF one of the most common CHDs, and it is one of the two cyanotic CHDs it studies, with reduced pulmonary blood flow. The answer is inferred from these lines; the handout does not rank the cyanotic lesions.
- 16 Which of the following is not used in treatment of cyanotic spells of Fallot's tetralogy?
(d) Hydrocortisone *Lesson 4*
 For cyanotic spells the handout gives the knee-chest position, oxygen, IV morphine and IV propranolol; hydrocortisone is not among them. Sodium bicarbonate is used to correct the acidosis of a severe spell.
- 17 In MOST patients with an ASD, the characteristic physical finding is:
(b) A wide and fixed splitting of 2nd heart sound *Lesson 4*
 The RV impulse is also increased in ASD, but wide and fixed splitting of S2 is the most characteristic sign of ASD. There is no audible murmur because of flow across the ASD, so a pansystolic murmur is not expected.
- 18 Regarding Ebstein's anomaly, which of the following is true?
(c) The most common associated defect is secundum ASD or PFO *Lesson 4*
 The most common associated defect is a secundum ASD or PFO, in over 50% of patients. The displaced leaflet is the septal leaflet of the tricuspid valve, the atrialized RV works as RA, and the ECG shows huge P waves.
- 19 Regarding closure of atrial septal defect (ASD), which of the following is true?
(b) RV volume overload with Qp:Qs > 1.5 is the main indication... *Lesson 4*
 RV volume overload on echo with Qp:Qs above 1.5 is the main indication for ASD closure, even without symptoms. Ostium primum and sinus venosus defects are not amenable to transcatheter closure.
- 20 Regarding coarctation of the aorta in adolescents and adults, which of the following is true?
(b) The constriction typically lies just distal to the left... *Lesson 4*
 Coarctation typically lies just distal to the left subclavian at the site of the ductal attachment. A bicuspid aortic valve is the most common coexisting anomaly, true claudication is rare, and surgery is more hazardous in adults than in children.
- 21 The following investigations are used in diagnosis of valvular heart lesions except:
(b) CT chest *Lesson 5*
 Trans-thoracic and trans-esophageal echo and coronary angiography before open heart surgery are the investigations used. CT chest is not one of them; only a CT aortogram is used, in patients with aortic aneurysm.
- 22 In chronic aortic regurgitation, Quincke's sign is:
(a) Capillary pulsation at the root of the nail when pressure... *Lesson 5*
 Quincke's sign is capillary pulsation seen at the root of the nail when pressure is applied to the tip. Head nodding is de Musset sign, higher lower limb pressure is Hill's sign and pistol-shot sounds are Traube's sign.
- 23 A man with infective endocarditis develops acute severe aortic regurgitation with acute pulmonary oedema. He...
(c) Beta-blockers *Lesson 5*
 In acute AR, beta-blockers are avoided as they reduce the cardiac output and the slower rate allows more time for diastolic filling of the LV. Oxygen, diuretics (if no hypotension) and inotropes such as dobutamine are used.
- 24 Regarding mitral stenosis, which of the following is true?
(a) Oral anticoagulation is indicated if the left atrium is... *Lesson 5*
 A dilated left atrium > 50 mm is an indication for oral anticoagulation in mitral stenosis. The MS murmur increases on lying on the left lateral position, AF is a common finding, and surgery is for anatomy not suitable for balloon valvotomy.
- 25 After assessment of cardiovascular risk in an asymptomatic patient with coronary heart disease, if the...
(c) Referral for invasive testing. *Lesson 6*
 Invasive coronary angiography is recommended in patients with positive stress test, while CT coronary angiography is a good negative test in patients less likely to have coronary artery disease. So a high-risk patient goes on to invasive testing; retesting later and non-invasive testing suit lower risk, and folic acid has no role.

- 26 Which of the following is NOT one of the criteria of typical chest pain?
(c) Pain provocation by deep inspiration Lesson 6
 Typical angina is constricting chest discomfort, brought on by exertion or emotion, and relieved within minutes by rest or nitroglycerin. Pain made worse by deep breathing is pleuritic pain and points to a non-ischemic cause. A duration of about 15 minutes is still consistent with angina, which is short-lived (minutes, not seconds or hours), so it does not exclude typical pain.
- 27 Nitrates are anti-anginal drugs. Which of the following is a common side effect?
(c) Headache. Lesson 6
 Headache is a common side effect of nitrates that could be managed with paracetamol. Nitrates are vasodilators, so they lower rather than raise blood pressure.
- 28 Regarding third-line anti-anginal drugs, which of the following is true?
(d) Ivabradine may cause visual disturbance (phosphenes) Lesson 6
 Ivabradine may cause visual disturbance (phosphenes) due to retinal side effects. Nicorandil must not be combined with nitrates, ranolazine prolongs QTc, and trimetazidine changes the heart fuel from fatty acids to glucose.
- 29 A patient with NSTEMI has elevated troponin and dynamic ST segment changes. He is haemodynamically stable,...
(b) Within less than 24 hours Lesson 6
 Elevated troponin and dynamic ST or T changes make the patient high risk, so PCI is done within less than 24 hours. The 2 hour window is for hemodynamic or electrical instability or refractory pain, and fibrinolytic therapy is only for STEMI.
- 30 In cardiovascular disease, reduction in complications or disability with rehabilitation is called:
(d) Tertiary prevention Lesson 6
 Tertiary prevention is reduction in complications or disability, rehabilitation, or restoration of function. Primordial prevents the risk, primary reduces incidence, and secondary reduces prevalence or consequence of disease.
- 31 Which of the following is the least cardiac lesion that can develop infective endocarditis?
(c) ASD Lesson 7
 Infective endocarditis is rare in ASD due to the low pressure gradient between the two atria. VSD and PDA are among the congenital lesions where it is common, and pulmonary stenosis is not named as a rare site.
- 32 The causative organism of infective endocarditis when the route of entry is dental procedures is:
(a) Streptococcus viridans Lesson 7
 After dental procedures and oral or upper respiratory surgery the organism is usually Strept. viridans. Staph. aureus follows cardiac surgery and catheterization, and Strept. faecalis follows gastrointestinal and genitourinary procedures.
- 33 Which of the following laboratory findings may be found in infective endocarditis?
(b) False positive rheumatoid factor Lesson 7
 Immunological tests in infective endocarditis show increased gamma globulins and a false positive rheumatoid factor. The ESR is increased but not as high as in rheumatic fever, and blood culture is positive in 80% of cases.
- 34 All are causes of hemorrhagic pericardial effusion except:
(d) Heart failure Lesson 8
 Haemorrhagic pericarditis occurs in malignant infiltration, uraemia, myocardial infarction and T.B.. Right-sided heart failure causes hydropericardium, an accumulation of transudate.
- 35 All are signs of pericardial tamponade except:
(d) Pulmonary crepitations Lesson 8
 Signs of tamponade include signs of low COP, pulsus paradoxus, congested neck veins and weak distant heart sounds. Pulmonary crepitations are not among them; the chest x-ray shows pulmonary oligoemia.

- 36** Which of the following favours constrictive pericarditis rather than pericardial effusion?
(c) Early diastolic dip followed by plateau (square root sign)... Lesson 8
 An early diastolic dip followed by plateau (square root sign) on ventricular pressure tracing is a finding of constrictive pericarditis. A flask-shaped shadow that changes from day to day and Ewart's sign belong to pericardial effusion.
- 37** A pericardial aspirate shows proteins > 3 gm%, LDH > 200 IU/L and white cells > 1000/cmm. Which of the...
(d) Tuberculous pericarditis Lesson 8
 Proteins > 3 gm%, LDH > 200 IU/L and cells > 1000/cmm define an exudate, and T.B. is the most common cause of exudative effusion. Right sided heart failure, liver cell failure and nephrotic syndrome give a transudate.
- 38** In hypertrophic obstructive cardiomyopathy (HOCM), the midsystolic murmur along the left sternal border:
(a) Increases on standing Lesson 9
 The HOCM midsystolic murmur increases on standing and decreases with squatting or leg raising, because more venous return fills the ventricle and decreases the obstruction.
- 39** From the following scenarios, who is NOT suspected to have secondary hypertension?
(a) A 33-year-old obese woman presenting with BP 160/90 and a... Lesson 10
 Heredity and obesity are predisposing factors of essential HPN, so the young obese woman with a family history fits essential HPN. Sudden development, HPN resistant to treatment and onset after 50 years are clues to renal artery stenosis, a secondary cause.
- 40** Which of the following statements regarding the treatment of hypertensive emergencies and urgencies is FALSE?
(c) All patients with marked blood pressure elevation should... Lesson 10
 Only patients with acute target organ damage (emergencies) need hospitalization, preferably in ICU. Urgencies have no acute end organ damage and blood pressure is lowered over 1-2 days.
- 41** Regarding severe elevation of blood pressure, which is incorrect?
(c) Needs only reassurance of the patient and relatives. Lesson 10
 Severe elevation of blood pressure always needs treatment, never reassurance alone. Without acute end organ damage it is an urgency, lowered over 1-2 days; with acute Lt.v. failure and pulmonary oedema it is an emergency needing hospital and rapid reduction.
- 42** All of the following antihypertensive drugs are safe in pregnancy except:
(b) ACEI Lesson 10
 ACE inhibitors are on the 'Avoid' list of HPN with pregnancy. Alpha methyl dopa and CCBs (not at labour) are on the 'Use' list, and labetalol is a safe combined alpha and beta blocker.
- 43** Grade IV hypertensive retinopathy is defined by:
(d) Papilloedema plus grade III changes Lesson 10
 Grade IV hypertensive retinopathy is papilloedema plus grade III changes. Narrowing is grade I, silver wiring with kinking of veins is grade II, and flame shaped hge with cotton exudate is grade III.
- 44** Which antihypertensive drug is correctly matched with its side effect?
(c) Clonidine: rebound hypertension Lesson 10
 Clonidine causes postural hypotension and rebound hypertension. Hydralazine causes tachycardia, minoxidil causes hirsutism, and reserpine causes depression.
- 45** What is the most probable group of pulmonary hypertension in a patient with history of recurrent pulmonary...
(d) Group 4 Lesson 11
 Recurrent pulm. emboli cause obstructive (obliterative) pulmonary hypertension by obstruction of the pulm. arterioles. Chronic thromboembolic pulmonary hypertension is WHO group 4.
- 46** In pulmonary hypertension, the Graham Steell murmur is:
(c) Early diastolic murmur due to functional pulmonary... Lesson 11
 The Graham Steell murmur is an early diastolic murmur due to functional PR in pulmonary hypertension. The ejection systolic murmur of relative PS and functional TR are separate findings, and the machinery murmur belongs to PDA.

47 Which of the following is considered an indirect marker of DVT?

(b) D-dimer *Lesson 12*

D-dimer is raised in thromboembolism but is not specific; it is a breakdown product of fibrin, so it points to a clot indirectly.

48 In suspected cases of deep vein thrombosis, which of the following is the most appropriate investigation?

(c) Duplex ultrasound scan *Lesson 12*

Colored Doppler and venography are both listed for diagnosis of DVT; duplex ultrasound is preferred because it is accurate and non-invasive. D-dimer is not specific, and CT pulmonary angiography looks for a lung embolus.

49 A patient with massive pulmonary embolism presents with shock. Which of the following is the treatment of...

(b) Thrombolytic therapy *Lesson 12*

A hemodynamically unstable patient, with shock or heart failure, is treated with thrombolytic therapy. Embolectomy is done when thrombolysis is contraindicated, IVC interruption is for stable patients who cannot take anticoagulants, and morphine is avoided.

50 A patient with atrial fibrillation and rheumatic mitral stenosis needs long-term anticoagulation. Which drug...

(a) Warfarin with INR 2-3 *Lesson 13*

AF with mitral stenosis or a prosthetic valve needs VKA (warfarin) after bridging with parenteral anticoagulation till INR 2-3. Rivaroxaban and apixaban are used only when there is no mitral stenosis or prosthetic valve.