

शहीद गंगालाल राष्ट्रिय हृदय केन्द्र

पदपूर्ति समिति

पद: कन्सल्ट्यान्ट कार्डियोलोजिष्ट (सेवा - प्राविधिक, समूह - मेडिकल, उप-समूह - कार्डियोलोजी)
को आन्तरिक प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

एवं परीक्षा योजना

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

प्रथम चरण :- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

प्रथम चरण (First Phase) : लिखित परीक्षा योजना (Written Examination Scheme)

Paper	Subject	Full Marks	Pass Marks	No. Questions & Weightage	Time Allowed
I	Technical Subject	100	40	50 × 2 = 100 (Objective Multiple Choice Questions)	1.00 hrs
II		100	40	5 × 20 = 100 (Subjective Descriptive Type)	3.00 hrs

द्वितीय चरण (Second Phase)

Subject	Full Marks	Examination
Interview	30	Oral

द्रष्टव्य :

- यो परीक्षा योजनालाई प्रथम चरण (लिखित परीक्षा) र द्वितीय चरण (अन्तर्वार्ता) गरी दुई चरणमा विभाजन गरिएको छ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- प्रथम र द्वितीय पत्रको पत्रको विषयवस्तु एउटै हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- विषयगत प्रश्नको हकमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डका उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम विनियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- पाठ्यक्रम लागू मिति :- २०७६।११।१९

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Paper I & II : - Technical Subject

Section (A): 50 % Marks

1. Clinical Cardiology

- 1.1 History taking and physical examination in cardiology
- 1.2 History, physical examination, diagnosis, management and prognosis of following Cardiovascular diseases and conditions:
 - 1.2.1 Coronary artery disease
 - 1.2.2 Systemic arterial hypertension
 - 1.2.3 Rheumatic fever and rheumatic heart disease
 - 1.2.4 Congenital heart disease
 - 1.2.5 Cardiopulmonary diseases and Pulmonary arterial hypertension
 - 1.2.6 Cardiomyopathy
 - 1.2.7 Vascular diseases
 - 1.2.8 Tumors of heart
 - 1.2.9 Heart failure
 - 1.2.10 Arrhythmia
 - 1.2.11 Sudden cardiac death and cardiopulmonary resuscitation (CPR)
 - 1.2.12 Pericardial diseases
 - 1.2.13 Systemic diseases involving heart and blood vessels
 - 1.2.14 Non-cardiac surgery in heart patients
 - 1.2.15 Pregnancy in heart diseases
 - 1.2.16 The heart and kidney disease
 - 1.2.17 Cardiovascular diseases in elderly

2. Epidemiology of cardiovascular diseases, preventive cardiology and cardiac rehabilitation

- 2.1 Epidemiology and worldwide burden of cardiovascular diseases
- 2.2 Established and emerging cardiovascular risk factors
- 2.3 Primordial, primary and secondary prevention of coronary heart disease
- 2.4 Prevention of congenital heart diseases
- 2.5 International and national prevention policies
- 2.6 Cardiac rehabilitation: principles, rationale, recommendation and guidelines, practical implication of cardiac rehabilitation programs

3. Non-invasive Cardiology and Imaging

- 3.1 Principles, technique, interpretation of Electrocardiogram (ECG)
- 3.2 Chest X-ray in cardiovascular diseases
- 3.3 Principles, indication, technique, interpretation of Holter monitoring
- 3.4 Principles, indication, technique, interpretation of Ambulatory blood pressure monitoring
- 3.5 Techniques, exercise protocol, indication, contraindication, interpretation, limitations of exercise ECG tests
- 3.6 Echocardiography
 - 3.6.1 General principles
 - 3.6.2 Trans-thoracic echocardiography
 - 3.6.3 Three dimensional echocardiography
 - 3.6.4 Trans-esophageal echocardiography

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- 3.6.5 Principles of Doppler echocardiography
- 3.6.6 Assessment and quantification of chambers
- 3.6.7 Assessment and quantification of vascular lesions
- 3.6.8 Assessment and quantification of LV/RV function
- 3.6.9 Tissue Doppler, strain imaging and speckle tracking
- 3.6.10 Contrast echocardiography
- 3.6.11 Non-invasive estimation of pressure; volume and shunt lesions
- 3.6.12 Assessment of myocardial ischemia and viability using echocardiography
- 3.6.13 Echocardiography in emergency room
- 3.6.14 Segmental approach in congenital heart disease
- 3.6.15 General introduction of Fetal echocardiography
- 3.6.16 Assessment of prosthetic valve by echocardiography
- 3.6.17 Assessment of pericardial diseases by echocardiography
- 3.7 Nuclear cardiac Imaging: Types, indication, contraindications, interpretation clinical application
- 3.8 Cardiac CT: Indication, contraindication, interpretation, clinical application, use of CT coronary angiogram and coronary CT calcium score
- 3.9 Cardiac MRI: Indication, contraindication, clinical application of cardiac MRI in different cardiovascular diseases

Section (B): 50 % Marks

4. **Invasive cardiology / cardiac electrophysiology**
 - 4.1 Right and left heart catheterization: Indications, technique, interpretation
 - 4.2 Invasive hemodynamic assessment
 - 4.3 Coronary angiogram and coronary intravascular imaging: Indication, contraindication, technique
 - 4.4 Coronary Intervention: Principles, indication, technique
 - 4.5 Different types of coronary stents and principles of use
 - 4.6 Temporary pacemaker insertion: Indication, technique, complications
 - 4.7 Pericardio centesis: Indication, contraindication, technique
 - 4.8 Intervention in structural and congenital heart diseases
 - 4.9 Radiation hazard and protection
 - 4.10 Complications in cardiac cath lab and their management
 - 4.11 Basics of intra-cardiac ECG
 - 4.12 General introduction to radiofrequency ablation
 - 4.13 Pacemakers, ICD and CRT: General introduction and indications
5. **Recent advances in cardiology**
 - 5.1 Research methodology
 - 5.2 Major land mark and recent studies/trials in cardiology and their implication in clinical practice
 - 5.3 Major national/international management guidelines and updates in cardiology