

बि.पि. कोइराला मेमोरियल क्यान्सर अस्पताल
प्राविधिक (स्वास्थ्य) सेवा, मेडिकल (चिकित्सक) समुह, एनेस्थेसियालोजी उपसमुह, रजिष्ट्रार पदको खुला र
आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम एवं परीक्षा योजना

कूल पूर्णाङ्क :- १५०

१. प्रथम चरण : - लिखित परीक्षा						पूर्णाङ्क :- १००	
पत्र	विषय	पूर्णाङ्क	उतीर्णाङ्क	परीक्षा प्रणाली		प्रश्नसंख्या X अङ्क	समय
प्रथम	प्राविधिक विषय र सम्बन्धित कानूनहरु	१००	४०	वस्तुगत	बहुवैकल्पिक प्रश्न	१०० प्रश्न x १ अङ्क	१ घण्टा ३० मिनेट
२. द्वितीय चरण : - प्रयोगात्मक							
विषय	पूर्णाङ्क	उतीर्णाङ्क	परीक्षा प्रणाली			समय	
प्रयोगात्मक	३०	-	प्रयोगात्मक				
३. तृतीय चरण : - अन्तर्वार्ता							
विषय	पूर्णाङ्क	उतीर्णाङ्क	परीक्षा प्रणाली			समय	
अन्तर्वार्ता	२०	-	मौखिक				

द्रष्टव्य :

- यो परीक्षा योजनालाई प्रथम चरण (लिखित परीक्षा), द्वितीय चरण (प्रयोगात्मक) र तृतीय चरण गरी तीन चरणमा विभाजन गरिएको छ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- लिखित परीक्षामा यथासम्भव पाठ्यक्रमका सबै एकाईबाट प्रश्नहरु सोधिनेछ ।
- विषयगत प्रश्नमा प्रत्येकपत्र/विषयका प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरु हुनेछन् । परिक्षार्थीले प्रत्येक खण्डका प्रश्नहरुको उत्तर सोही खण्डका उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरु 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 उम्मेदवारहरुलाई मात्र दोस्रो चरणको परीक्षामा सम्मिलित गराईनेछ । दोस्रा चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरुलाई मात्र तृतीय चरणको परीक्षामा सम्मिलित गराइनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरुको गलत उत्तर दिएमा अङ्क कट्टा गरिने छैन ।
- पाठ्यक्रम लागू मिति :-२०७३/४/३०

यस पत्र/विषयको पाठ्यक्रमबाट यथासम्भव निम्नानुसार प्रश्नहरु सोधिनेछ ।

खण्ड	अङ्कभार	प्रश्न संख्या
		वस्तुगत
A	१०	१० प्रश्न X १ अङ्क = १०

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B	१०	१० प्रश्न x १ अङ्क = १०
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Section (A) – 10 Marks

1. B.P.Koirala Memorial Cancer Hospital, Related Legislations and General Health Issues

- 1.1. B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
- 1.2. National Health Policy
- 1.3. B.P.Koirala Memorial Cancer Hospital related act and regulations
- 1.4. Health Service Act, 2053 and Health Service Regulation, 2055
- 1.5. Professional council related acts and regulations
- 1.6. NMC and National Health Agencies
- 1.7. Anaesthesia Related Information
 - 1.7.1. History of Anaesthesia of Nepal
 - 1.7.2. Society of Anaesthesiologists of Nepal
 - 1.7.3. South Asian Confederation of Anaesthesiologists.
 - 1.7.4. World Federation of Societies of Anaesthesiologists

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Technical Subject

Section (B) – 90 Marks

1. Anatomy and Physiology

- 1.1 Anatomy of the airway
- 1.2 Anatomy of the spinal cord and nerve supply to the extremities
- 1.3 Central nervous system
 - 1.3.1 Resting membrane potential
 - 1.3.2 Neuro-muscular and synaptic transmission
 - 1.3.3 Receptors and transmitters
 - 1.3.4 Sensory perception and the pathways involved
 - 1.3.5 Factors affecting muscle tone
 - 1.3.6 Cerebrospinal fluid
- 1.4 Physiology of respiratory system
 - 1.4.1 Lung volumes and capacities measurement
 - 1.4.2 Clinical application
 - 1.4.3 Lung function tests
 - 1.4.4 Ventilation/perfusion ratios in the lung
 - 1.4.5 Control of respiration
 - 1.4.6 Effects of drugs
 - 1.4.7 Blood gas transport
 - 1.4.8 Pulmonary circulation
 - 1.4.9 Physiology of lung mechanics, compliance, resistance, surfactant
- 1.5 Physiology cardiovascular system
 - 1.5.1 The cardiac cycle
 - 1.5.2 Instrumentation, the oscilloscope and ECG
 - 1.5.3 Cardiac output and its measurement, blood pressure
 - 1.5.4 Microcirculation
 - 1.5.5 Control of the circulation
 - 1.5.6 Ventricular function curve
 - 1.5.7 Cardiac arrest
 - 1.5.8 Cardiac pulmonary resuscitation
- 1.6 Renal physiology
 - 1.6.1 Renal blood flow
 - 1.6.2 Renal function tests
 - 1.6.3 Control of blood volume
 - 1.6.4 Water and electrolyte balance
 - 1.6.5 Renal influence on acid-base balance
 - 1.6.6 Haemodialysis (silent features)

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- 1.6.7 End stage renal failure
- 1.6.8 Management of hyperkalima
- 1.7 Liver Physiology
 - 1.7.1 Liver perfusion and function
 - 1.7.2 Liver function tests
 - 1.7.3 Hematology
 - 1.7.3.1 Hemoglobin, normal and abnormal, clotting
 - 1.7.3.2 Blood transfusion
 - 1.7.3.3 Disseminated intravascular clotting
 - 1.7.3.4 Management of anticoagulation
- 2. **History of Anaesthesia** - From open to modern anaesthesia, balanced anaesthesia, dissociative anaesthesia and total intravenous anaesthesia
- 3. **Basic Science and Instruments**
 - 3.1 Physics of pressure measurement, manometers and strain gauges and transduce
 - 3.2 Physics of flow, laminar and turbulent, viscosity and density
 - 3.3 Physics of heat
 - 3.3.1 Thermal conductivity in the body
 - 3.3.2 Sources of heat loss during anesthesia
 - 3.3.3 Methods of measuring temperature, thermostats and thermocouples
 - 3.3.4 Management of malignant hyperpyrexia
 - 3.4 Anaesthesia machines and circuits, respirometers and rotameters
- 4. Assessment of patients, effects on choice and technique of anaesthesia, radiological assessment of lung disorders
- 5. **Pharmacology and Clinical Practices of Anaesthesia**
 - 5.1 Pharmaco-kinetics of anesthetics drugs, uptake, distribution, transport and drug binding, partition coefficients, pK and ionization, regional uptake, MAC, enzyme induction and drug elimination
 - 5.2 Sedatives: Barbiturate and non-barbiturate hypnotic, common tranquillizers, premedication
 - 5.3 Analgesics, Opioids and NSAIDS, and interaction with other drugs
 - 5.4 Local anesthetics, methods of prolongation of action and effects and treatment of overdose
 - 5.5 Drugs and the parasympathetic system, cholinergic and anti-cholinergic compounds
 - 5.6 Drugs and the sympathetic system, sympathomimetic drugs alpha and beta-adrenergic compounds and their antagonist and effects of monoamine oxidize inhibitors,
 - 5.7 Drugs used in the control of blood pressure, Ganglion blocking drugs, drugs acting on the peripheral sympathetic nerves, catecholamine synthesis and storage. and vascular smooth muscle relaxants.

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- 5.8 Cardiacglycosides, digitalis and related compounds, onset and duration, factors modifying action, precipitating factors, toxicity
- 5.9 Inhalation anesthetic agents, Nitrous oxide, halothane ether, general properties and effects of other halogenated anesthetic agents
- 5.10 Vaporization and humidification, common vaporizers used in anesthesia
- 5.11 Intravenous induction agents, Thiopentone, Ketamine, diazepam
- 5.12 Narcoleptic agents
- 5.13 Histamine and antihistamines
- 5.14 Analeptic, complications of their use
- 5.15 Oxytocics and their interaction with inhalation anesthetics
- 5.16 Neuromuscular blocking agents, including abnormal responses and recurarisation
- 5.17 Diuretics
- 5.18 Hormone therapy, insulin and its substitutes, steroids
- 5.19 Thyroid, anti thyroid drugs and management of thyroid crisis
- 5.20 Steroids, management of steroid supplement/ withdrawal therapy
- 5.21 Oxygen therapy and toxicity and the physics of the gas laws
- 5.22 Resuscitation, acid-base balance
- 5.23 Blood gases, pulse oximetry, capnography
- 5.24 Emergency Anaesthesia
- 5.25 Acute and chronic pain control
- 5.26 Adrenal, pituitary, thyroid function
- 5.27 PCA, Regional blocks usg guided flouoscopic. CT Guided blocks, Nemolysis.
- 5.28 Anaesthesia for Neurosurgery.
- 5.29 Anaeshtesia for general surgery
- 5.30 Paediatric and geriatric anaesthesia
- 5.31 Anaesthesia for head and neck surgery
- 5.32 Specialized anesthesia :
 - 5.32.1 Obstetric (Radical Hystectomy)
 - 5.32.2 Renal surgery (Carcinoma urinary bladder, Plastate)
- 5.33 ICU organization, special problems
- 5.34 Anesthesia for thoracic surgery (Ca lungs, Mediastinum)
- 5.35 Anesthesia outside the operating theatre
- 5.36 Procedurs-Chemoport, PICC, CVP (CT scan, Radiotherapy)
- 5.37 Regional anesthesia (Spinal, Epidural Nerve Block)
