OPJS UNIVERSITY, CHURU (RAJASTHAN)

SYLLABUS

FOR

DIPLOMA IN CRITICAL CARE TECHNOLOGY
(DCCT)

SCHOOL OF PARA MEDICAL SCIENCE
OPJS UNIVERSITY, CHURU (RAJASTHAN)
2013-14
SCHEME OF EXAMINATION
Duration of course – 2 year (4 semester)

SEMMESTER-I

<table>
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<tr>
<th>S.No.</th>
<th>PAPER CODE</th>
<th>NAME OF PAPER</th>
<th>M.M.(T-S-P)</th>
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<tbody>
<tr>
<td>1</td>
<td>DCCT-11</td>
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<td>70+30+50 = 150</td>
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<tr>
<td>2</td>
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<td>MICROBIOLOGY &amp; CSSD</td>
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<td>BASIC OF CRITICAL CARE SERVICES</td>
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<td>DCCT-32</td>
<td>ICU MANAGEMENT</td>
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<td>DCCT-41</td>
<td>DIFFERENT PROEDURE &amp; EQUIPMENTS</td>
<td>70+30+50 = 150</td>
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<td>2</td>
<td>DCCT-42</td>
<td>CRITICAL CARE TECHNOLOGY</td>
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Details of Syllabus

SEMMESTER-I

DCCT-11-GENERAL ANATOMY & PHYSIOLOGY

— Head, Neck & Brain
— Upper limb anatomy
— Visral organ of abdomen
— Lower limb anatomy

— Anatomy of Thorax:-
  Anatomy of upper respiratory tract (nose, oral cavity, pharynx, larynx).
  Anatomy of lower respiratory tract (trachea, bronchi, hilum, bronchial tree, alveolus).
  Anatomy of thoracic cage bone, muscle, innervations.
  Anatomy of lung (pleura, lobes).

— Anatomy of heart:-
  Pericardium, myocardium, endocardium, valves, chamber vascular system.

— Physiology of respiratory system:-
  Physiology of breathing, gas exchange, transport of O₂, CO₂.
  Acid base balance.

— Physiology of cardiovascular system:-
  Heart sound, cardiac cycle, cardiac output, cardiac conducting system, blood pressure.
  Physiology of E.C.G..

**DCCT-12-APPLIED ANATOMY & PHYSIOLOGY**

— Respiratory system applied Anatomy:-
  Medical terminology, pleura, lobes of long, bronchopulmonary tree, passage to deliver artificial respiratory gases, Surface marking of lungs, approach to different lobes, method of pulmonary drain.

Respiratory system applied Physiology
  nebulization process, homeostasis, lung volume, O₂ transport abnormality, CO₂ transport abnormalities, ventilation and perfusion V/Q ratio, acid base balance, pulmonary function test, ABG.

— Regional circulation:-
  Coronary, cerebral, splanchnic circulation

Cardiac system applied Anatomy

Coronary artery branches, coronary vein branches, cardiac muscle supply, conduction system of the heart.

Cardiac system applied physiology
  basic arrhythmias, Principles of ECG, Hypertension, mean pulse pressure, central line, central veins pressure, CVP monitoring, Basic electrolytes

— CNS :-
  Central, peripheral and autonomic nervous system pain pathway and pain modulation
  Metabolic requirement of the brain consciousness, coma, brain injury, sedation,

**SEMESTER-II**

**DCCT-21-PHARMACOLOGY**

— General pharmacology
— Drugs nomenclature
— Mode of action of drugs
— Route of drug administration
— Drug dose calculation: dilution, infusion rate
— Medical gases, O₂, N₂O
— Bronchodilators
— Mucolytic agents
— Antihistamines
— Steroids
— Drugs affecting autonomic nervous system isotropic agents chronoscopic agents
— Antihypertensive
— Anti heart failure
— Analgesic, sedative
— Neuromuscular blocking agents
— Diuretics
— Anti Inflammatory drugs
— Antibiotics & antiseptics
— Emergency drugs

**DCCT-22-MICROBIOLOGY AND CSSD**

— Importance of infection control in an ICU
— Agent causing infection
— Spread of infection
  (source-host, transmission)
— Biohazardous materials
— Infection control & universal precautions
— Sterilization & disinfection concept
— Specific infection
   Nosocomial infections, types, prevention HIV-AIDS, HBSAG-hepatic A,B,C

— Tropical infection
   An introduction of CSSD department

SEMMESTER-III

DCCT-31-BASIC OF CRITICAL CARE SERVICES

— Introduction

— Cardiopulmonary resuscitation- basic & advanced

— Advanced cardiac life support

— Oxygen therapy

— Aerosol therapy

— Mechanical ventilation

— Patient para monitoring

— Complication of ICU care

— Nutrition for critically ill patients

— ICU infection

— Ethics & behavior in ICU

DCCT-32-ICU MANAGEMENT

— Recording & reporting of various parameter in ICU

— Care of unconscious patient

— Planning for the ICU Setup patient

— Basic of CPR

— Basic cardiac life support

— Advance cardiac life support
— Newer guideline for life support
— Defibrillator
— Common care in ICU
— Care of anesthetized patient
— Medical, legal & ethical issue in trauma

**SEMESTER-IV**

**DCCT-41-DIFFERENT PROCEDURE & EQUIPMENTS**

— Blood gas analysis
— Specimen collection & handling, operation principle of operation, maintenance, trouble shooting installation, programming
— Blood electrolyte analysis
— Bedside monitor – System introduction, external devices, monitoring parameter, setting different parameter
— Endotrachial tube
— Operation, display, recording, printing, cleaning & care
— Temporary peacemaker
— Pulse oximetry
— Capnometry
— Mechanical ventilation
— Multimodality bedside monitor
— ECG
— Defibrillator – monitor
— Oxygen supply and storage
— Nebulizer
— Bronchoscopy
Glucometer, tracheostomy & advanced, airway

**DCCT-42-CRITICAL CARE TECHNOLOGY**

**Airway, breathing & circulation**
- Airway care
- Indication for artificial airways
- Selecting and establishing an artificial airway
- Airway clearance techniques

**Oxygen therapy**
- Sourced of O₂, Storage of O₂
- Mode of O₂ therapy

**Mechanical ventilation**
- Type of ventilator
- Weaning from ventilator
- Care of patient on ventilator

**Cardiovascular support**
- Setting up invasive pressure monitoring, leveling, calibration, zeroing, measuring pressure.

**Respiratory support**
- PEEP, CPAP And BIPAP Circuits

**Equipment maintenance & basic troubleshooting**
- Ventilator, pump - infusion, syringe
- Monitor - stand alone and multi parameter, ECG machine, ABG machine, Defibrillator

**Tools of intensive care.**

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