

B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
(New Syllabus 2014 - 2015)
THIRD YEAR
PAPER III – CLINICAL PROCEDURES AND INSTRUMENTATION IN
EMERGENCY SERVICES

Q.P. Code: 801028

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. a) What is difficult airway?
b) Name one scoring system for assessing airway and explain it.
c) Write two techniques used in difficult airway situation.
d) Preparation of cricothyroidotomy.
2. a) How will you identify cardiac tamponade?
b) Name the procedures used in this condition.
c) Preparation for the above procedure to be done.
d) Complication of procedure done for cardiac tamponade.
3. a) What are the factors contributing to maintain normal blood pressure?
b) How will you record the blood pressure in difficult situation?
c) Indication for NIBP.

II. Write notes on:

(8 x 5 = 40)

1. Activated charcoal – indication, contraindication and dosage.
2. Combitube.
3. Note on Nebulizer.
4. Define and mechanism of venture mask.
5. Write short notes on abnormal breathing patterns.
6. Type of oxygen cylinder and draw diagram of oxygen cylinder with humidifier.
7. Indication and procedures of umbilical vein cannulation.
8. Write in details regarding of central venous cannulation.

III. Short answers on:

(10 x 3 = 30)

1. Color and size of the oropharyngeal airway.
2. Indication and site of intraosseous insertion.
3. Indications and size of nasopharyngeal airway.
4. What is Infant warmer and incubator?
5. Complication of intraosseous infusion.
6. Size, color and flow rate of intra venous cannulation.
7. What is Cushing triad?
8. Name 3 drugs used in cardiac arrest with doses.
9. Draw a Normal ECG waveform & what is P, QRS, T waves represents.
10. What are the splints used in immobilization of fractures of
 - a) Femur
 - b) Finger
 - c) Forearm
 - d) Clavicular

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I. Elaborate on: **(3 x 10 = 30)**

1. Type of ventilation. What are the common parameters settings and mode of ventilation? How will you identify the problem and troubleshooting?
2. What are the vital signs you will measure in all patients presenting to the ED? Normal values, four important vital signs with common conditions in which they are altered.
3. Explain the details about the primary survey and secondary survey of trauma.

II. Write notes on: **(8 x 5 = 40)**

1. Indication, contraindication, procedure and complication of synchronized cardioversion.
2. Write in details regarding esophageal-tracheal combitube intubation.
3. Indication, contraindication, technique and complications of ICD.
4. ECG – Placement, normal ECG waveform, HR calculation.
5. Ryle's Tube – indication, contraindication, measurement and technique.
6. Mention the reversible cause of cardiac arrest.
7. Draw the diagram of endotracheal tube and mention its parts and uses.
8. Pulse oximeter.

III. Short answers on: **(10 x 3 = 30)**

1. Types of suction catheter and suction apparatus.
2. Draw a diagram of Guedel airway and mention its parts and measurement.
3. Logroll – indications and technique.
4. Management of hyperkalemia.
5. Laryngoscope – types of blade and uses.
6. Beck's Triad.
7. Uses of activated charcoal.
8. Define – Dialysis and its types.
9. Immediate management of tension pneumothorax.
10. Types of suture material.

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Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. a) What are the types of defibrillator?
b) Indication for using defibrillator.
c) Describe the principles and functions of defibrillator.
2. a) Mention 5 indications of rapid sequence intubation (RSI).
b) Preparation of RSI.
c) Method to check correct placement of ET.
d) Complications of endotracheal intubation.
3. a) Intraosseous infusion – indication, preparation, technique,
b) Drug can be administered through IOL and complication.

II. Write notes on: **(8 x 5 = 40)**

1. Indication and procedures of pericardiocentesis.
2. Name two airway adjunct and technique of using it.
3. Write down the preparation and steps for Endotracheal tube Extubation.
4. Draw and label 'Einthoven Triangle' and explain it.
5. Urethral catheterization – indications, contraindications and technique.
6. Procedure and indication for use of Transcutaneous pacing.
7. How will you administer different concentration of O₂ using the mask, describe the color respectively?
8. Laryngeal mask airway.

III. Short answers on: **(10 x 3 = 30)**

1. Indication of ICD.
2. Components of primary survey.
3. Types of venturi mask.
4. Name 4 sites used in central venous cannulation.
5. Uses of scoop board.
6. Explain AMBU and mention its parts.
7. What is oxygen therapy?
8. Management of pneumothorax.
9. Mallampati score.
10. Indication of cricothyrotomy.

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on: (3 x 10 = 30)

1. a) What is Tracheostomy?
b) List out its indication.
c) Explain in detail about the Emergency management of Tracheostomy.
2. a) What is Mechanical Ventilation?
b) Mention the different types of modes used in ventilator.
c) Write the Emergency management of patients with ventilators.
3. Explain in detail about Intraosseous infusion and its emergency management.

II. Write notes on: (8 x 5 = 40)

1. Lumbar puncture.
2. Thoracentesis.
3. Drugs administered through Endo tracheal Tube.
4. Methods of oxygen administration.
5. What is AMBU BAG? List out its indications, draw and label its parts.
6. Define Pulse, Explain about the sites of pulse assessment?
7. What is Mean Arterial Pressure? Describe about the factors affecting Blood Pressure.
8. Pulse-oximeter.

III. Short answers on: (10 x 3 = 30)

1. Draw Laryngoscope and name its parts.
2. List out the abnormal respirations?
3. Peritoneal dialysis.
4. Enlist the complications of umbilical vein cannulation.
5. Sites of Intravenous Infusion.
6. What is defibrillation?
7. Uses of Medical gases in emergency department.
8. Drugs used for nebulisation.
9. Advantages of oral temperature.
10. What is Metered Dose Inhaler?

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Explain in detail about radiation hazards and its preventive measures.
2. Elaborate answer for indication, procedure and emergency care of patients undergoing Central Venous Pressure.
3. Describe about the techniques of insertion of Naso gastric tube and initiation of feedings.

II. Write notes on: **(8 x 5 = 40)**

1. Laryngoscope.
2. Concepts of Bio medical engineering.
3. Safety features available on infusion pump.
4. List out the equipments used in intercostal drainage and its post operative care.
5. Drugs used through ET.
6. Placement and management of external AV shunt.
7. List out the indications and preparation of a patient for upper gastrointestinal endoscopy?
8. Explain the Procedure of insertion of rectal tube.

III. Short answers on: **(10 x 3 = 30)**

1. Define Paracentesis.
2. Different kinds of medical gases used in emergency department.
3. Complications of blood transfusion.
4. Draw the combitube and label its parts.
5. Types of fever.
6. What is the mechanism used in dialysis?
7. What is capnography?
8. Advantages of Intravenous fluid therapy.
9. Complications of intraosseous infusion?
10. What is the post operative care of patients undergone umbilical vein cannulation?

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Explain in detail about the indication, procedure, complications and emergency management of patients undergoing umbilical vein cannulation?
2. What are the roles and responsibilities of an emergency care technician when the patient received with RTA?
3. Continuous arteriovenous hemofiltration.

II. Write notes on: **(8 x 5 = 40)**

1. Explain the procedure of insertion of rectal tube.
2. Ambulance care.
3. What is the responsibility of an emergency nurse when a patient experiences allergic reaction during blood transfusion?
4. Indications and care of patients with urinary catheterization?
5. Sizes of ET tubes and their uses.
6. Cardioversion.
7. Describe the factors affecting temperature and care of patients with hyperthermia.
8. Pericardiocentesis.

III. Short answers on: **(10 x 3 = 30)**

1. Infant warmer.
2. Naso tracheal suctioning.
3. What is metered dose inhaler?
4. Different kinds of medical gases used in emergency department.
5. Advantages of the human NIBP system.
6. What is defibrillation?
7. Different colours of cannulas used in CVP.
8. List out the methods of oxygen administration.
9. Recording of oral temperature. What are the precautions?
10. What is LMA?

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LR 1220]

**DECEMBER 2020
(AUGUST 2020 EXAM SESSION)**

Sub. Code: 1028

**BACHELOR IN ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulation from 2014-2015)
PAPER III – CLINICAL PROCEDURES AND INSTRUMENTATION IN
EMERGENCY SERVICES
Q.P. Code: 801028**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. General Principles of Intravenous access.
2. Elaborate answer for indication, procedure and emergency care of patients undergoing Central Venous Pressure.
3. Describe about the techniques of insertion of Naso Gastric Tube and initiation of feedings.

II. Write notes on:

(8 x 5 = 40)

1. Laryngoscope.
2. Concepts of Bio-Medical Engineering.
3. Safety features available on infusion pump.
4. List out the equipment's used in intercostals drainage and its post-operative care.
5. What is Laryngeal Mask Airway (LMA).
6. Placement and management of external AV shunt.
7. List out the indications and preparation of a patient for upper Gastrointestinal Endoscopy?
8. Mention some of the abnormal ECG with ECG images.

III. Short answers on:

(10 x 3 = 30)

1. Define Paracentesis.
2. List out the indications of peritoneal lavage.
3. Complications of blood transfusion.
4. Draw the combitube and label its parts.
5. Types of fever.
6. What is the mechanism used in dialysis?
7. What is Capnography?
8. Advantages of Intravenous Fluid Therapy.
9. Complications of Intraosseous infusion?
10. What is the post-operative care of patients undergone umbilical vein cannulation?

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0122]

JANUARY 2022

Sub. Code: 1028

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulation from 2014-2015)
PAPER III – CLINICAL PROCEDURES AND INSTRUMENTATION IN
EMERGENCY SERVICES
Q.P. Code: 801028**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Mention the techniques, indications and contraindications of Gastric lavage with Activated Charcoal.
2. General Principles of Intravenous access.
3. Describe about incubator – purposes and care of baby in incubator.

II. Write notes on:

(8 x 5 = 40)

1. Indications of Lumbar Puncture.
2. Tracheal Suctioning.
3. Needle Cricothyroidotomy.
4. Complications of Blood transfusion?
5. Purposes of Urethral catheterization.
6. Indications and Contraindications of Peritoneal dialysis.
7. Drugs through intraosseous line.
8. Care of intercostal drainage during transport.

III. Short answers on:

(10 x 3 = 30)

1. What is Arterial Blood Gas (ABG) analysis? Write 5 clinical indications to perform ABG.
2. Laryngeal Mask Airway (LMA) and its uses.
3. Drugs used in nebulizer.
4. Indications of bowel irrigation.
5. Expand AMBU.
6. Name 3 medical gases.
7. Indications of Paracentesis.
8. Draw ECG wave images for MI & STEMI.
9. Different methods of O₂ administration.
10. What is the normal body temperature? Mention 3 special consideration of axillary temperature.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0922]

**SEPTEMBER 2022
(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)**

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulation from 2014-2015)
PAPER III – CLINICAL PROCEDURES AND INSTRUMENTATION IN
EMERGENCY SERVICES
Q.P. Code: 801028**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. What is Mechanical Ventilation? Write a note on various types of ventilator and emergency management of patients with ventilators.
2. a. What is peritoneal dialysis?
b. Explain the difference between hemodialysis and peritoneal dialysis.
c. Write a note on indications and complications of peritoneal dialysis.
3. Describe about the techniques of insertion of Naso gastric tube and initiation of feedings.

II. Write notes on:

(8 x 5 = 40)

1. Drugs administered through Endo tracheal Tube.
2. Pulse-oximeter.
3. Poison decontamination.
4. ECG.
5. List out the Complications of Cannulating Umbilical Vein.
6. Explain the placement and management of external AV shunt.
7. List out the indications and preparation of a patient for upper gastrointestinal endoscopy.
8. Concepts of Biomedical engineering.

III. Short answers on:

(10 x 3 = 30)

1. Different kinds of medical gases used in emergency department.
2. What is defibrillation?
3. Lumbar puncture.
4. Write a note on different types of fever.
5. Activated Charcoal.
6. What is capnography?
7. Drugs used for nebulisation.
8. What is Metered Dose Inhaler?
9. Complications of blood transfusion.
10. Tracheostomy.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0423]

APRIL 2023

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulations 2014-2015 & 2018-2019 onwards)
PAPER III – CLINICAL PROCEDURES AND INSTRUMENTATION IN
EMERGENCY SERVICES
Q.P. Code: 801028**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Elaborate on indications, procedure and emergency care of patients undergoing Central Venous cannulation.
2. Define vital signs. Explain in detail about the clinical procedures adopted to assess various vital signs.
3. Explain in detail about Intraosseous infusion and its emergency management.

II. Write notes on:

(8 x 5 = 40)

1. Laryngoscope.
2. ECG.
3. Lumbar puncture.
4. Drugs used through ET tube.
5. What is AMBU BAG? List out its indications, draw and label its parts.
6. Explain the procedure of insertion of rectal tube.
7. Write a note on Suturing of Wounds.
8. Methods of oxygen administration.

III. Short answers on:

(10 x 3 = 30)

1. What is the mechanism used in dialysis?
2. Defibrillation.
3. BP apparatus.
4. Enlist the complications of umbilical vein cannulation.
5. Draw the combitube and label its parts.
6. List out the abnormal respirations.
7. What is Mechanical Ventilator?
8. Complications of urinary bladder catheterization.
9. Advantages of oral temperature.
10. Thoracocentesis.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1123]

NOVEMBER 2023

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulations 2014-2015 & 2018-2019 onwards)
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EMERGENCY SERVICES
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Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. Define Central Venous Pressure. Write a brief note on indication, procedure and emergency care of patients undergoing Central Venous Pressure.
2. Explain in detail about Radiation Hazards and its prevention measures.
3. Describe about the techniques of Insertion of Naso Gastric Tube and initiation of feedings.

II. Write notes on: (8 x 5 = 40)

1. Mechanical Ventilation.
2. Vital sign measurement in emergency Room.
3. Laryngeal Mask Airway.
4. Lumbar puncture.
5. Personal protective equipment.
6. Gastric lavage – Technique, Indications and Contraindications.
7. Umbilical Vein Catheterization.
8. Peritoneal dialysis.

III. Short answers on: (10 x 3 = 30)

1. Pericardiocentesis.
2. Infant incubator.
3. Log roll.
4. What is Beck's triad?
5. Complications of Blood Transfusion.
6. What is Capnography?
7. What is Metered dose inhaler?
8. Complications of Intraosseous infusion.
9. Expand AMBU.
10. Draw ECG wave images for NSTEMI and STEMI.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0424]

APRIL 2024

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulations 2014-2015 & 2018-2019 onwards)
PAPER III – CLINICAL PROCEDURES AND INSTRUMENTATION IN
EMERGENCY SERVICES
Q.P. Code: 801028**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. Explain in detail about Radiation Hazards and its preventive measures.
2. Write about various Cardiovascular procedures done in Emergency Department. Explain any two in detail.
3. Indication, contraindication and procedure of Insertion Endotracheal Tube.

II. Write notes on: (8 x 5 = 40)

1. RSI (Rapid Sequence Intubation).
2. Indication and Procedure of Endoscopy.
3. Lumbar puncture.
4. Types of O₂ cylinders.
5. ECG.
6. Infant warmer.
7. Defibrillation.
8. Intercostal Drainage.

III. Short answers on: (10 x 3 = 30)

1. Combitube.
2. Complication of IV infusion.
3. Indications of umbilical vein cannula.
4. Tracheostomy Insertion and Management
5. Central Venous Catheter Placement and its complications.
6. Indications of Peritoneal dialysis.
7. Complications of intra osseous infusion.
8. Nasotracheal suctioning.
9. Different modes in mechanical ventilation.
10. Methods for Poison decontamination.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0125]

JANUARY 2025

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
THIRD YEAR – (Regulations 2014-2015 & 2018-2019 onwards)
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Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. What are the vital signs you will measure in all patients presenting to the ED? Normal values, four important vital signs with common condition in which they are altered?
2. Discuss in detail Dialysis machine.
3. Explain Tracheostomy insertion and management.

II. Write notes on: (8 x 5 = 40)

1. Indication, contraindication, technique and complications of ICD.
2. Ryle's Tube – indication, contraindication, measurement and technique.
3. Urethral catheterization – indications, contraindications and technique.
4. Thoracocentesis.
5. What is AMBU BAG? List out its indications, draw and label its parts.
6. Drugs used for Nebulization.
7. Blood Transfusion.
8. Ambulance care.

III. Short answers on: (10 x 3 = 30)

1. List out the indications and preparation of a patient for upper Gastrointestinal Endoscopy?
2. Normal ECG waves.
3. Pain score.
4. SPO₂.
5. Infant warmer.
6. Complications of Intraosseous infusion.
7. Draw the combitube and label its parts.
8. Central venous pressure.
9. BP apparatus.
10. ACLS.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0425]

APRIL 2025

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
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Q.P. Code: 801028**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. Explain in detail about the indication, procedure, complications and emergency management of patients undergoing umbilical vein cannulation.
2. General Management of poisoning in Emergency Department.
3. Explain in detail about radiation hazards and its preventive measure.

II. Write notes on: (8 x 5 = 40)

1. Write in detail regarding Absorbable and Non absorbable sutures.
2. Tracheal suctioning.
3. Mention the Do's and Don'ts of first aid in snake bite.
4. Peritoneal dialysis.
5. Types of O₂ Cylinder.
6. Intraosseous infusion.
7. Personal protective equipments.
8. Thoracocentesis.

III. Short answers on: (10 x 3 = 30)

1. What is metered dose inhaler?
2. Uses of scoop board.
3. Components of Primary survey.
4. What is Capnography?
5. Complications of blood transfusion.
6. Types of Venturi mask.
7. Draw a Normal ECG waveform and explain.
8. Mechanical ventilator.
9. Laryngoscope – types of blades and uses.
10. Haematuria.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1125]

NOVEMBER 2025

Sub. Code: 1028

**B.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY
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Q.P. Code: 801028

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on: **(3 x 10 = 30)**

1. Discuss the Procedure of Endotracheal Tube Intubation and Extubation.
2. 60-year-old female, known diabetic, presenting to Emergency room with unconsciousness. How will you manage the airway? Detail on Airway Equipments used.
3. Elaborate on Central Venous cannulation, indications and complications.

II. Write notes on: **(8 x 5 = 40)**

1. Medical gases.
2. Defibrillation.
3. Drugs used through ET tube.
4. Intravenous catheter.
5. Use of Supraglottic airway devices/
6. Lumbarpuncture.
7. Modes of mechanical ventilation.
8. Capnogram.

III. Short answers on: **(10 x 3 = 30)**

1. Indications for Nasogastric tube insertion.
2. Activated charcoal.
3. Transvenous cardiac pacing.
4. Pericardiocentesis.
5. Tracheostomy.
6. Nasotracheal suctioning.
7. Indications for cardioversion.
8. Esophageal – Tracheal combitube.
9. Uses of Magill's forceps.
10. Urethral catheterization.
