

Candidate Study Guide for the Illinois EMT-Intermediate (EMT-I) Licensure Examination

The following information is intended to help you prepare for the Illinois Emergency Medical Technician-Intermediate (EMT-I) Licensure Examination. Part I of this study guide contains general information about the profession and testing procedures. Part II provides a content outline, lists the competencies covered in the examination, and identifies reference materials that support this examination. Part III includes sample questions to help you prepare for this test.

Part I General Information

PURPOSE OF THE EXAMINATION

This examination has been developed in collaboration with Illinois Department of Public Health (IDPH) and representatives of the 11 Illinois Emergency Medical Service regions. EMT-I licensure is granted only to candidates who demonstrate sufficient knowledge of the U.S. Department of Transportation National Standard Curriculum for EMT-I as adapted and approved by IDPH.

TEST VALIDITY

The time limit for this examination is 2½ hours. This examination has been developed to meet strict standards of test fairness and validity to protect the health and safety of the public.

PHOTO ID

Each candidate must present a photo ID and a valid admission notice to be admitted to any of these examinations. Only a valid Driver's License, Secretary of State ID card, or a current passport is acceptable as photographic identification. If the name on the photo ID does not match the name on the admission notice, proof of legal name change also must be presented before the candidate can be admitted to an examination.

SPECIAL ACCOMODATIONS

Any candidate who needs special accommodations in test-taking procedures because of a disabling condition must communicate that need in writing with his or her application. No accommodations can be arranged on the day of a test.

SCORING THE EXAMINATION

Candidates who pass this examination will receive their license as an EMT-I from the Illinois Department of Public Health.

MISSING AN EXAMINATION

There are no "make-up" examinations. You may re-register for the next scheduled examination date.

RE-EXAMINATION

Candidates who fail the test will receive information to help them identify content areas on which they need to improve their performance to pass on a subsequent attempt. Candidates must register to take the test again through the resource hospital associated with their EMT-I training program.

Part II Test Content Outline

This examination was developed in collaboration with a committee of representatives of the 11 Illinois Emergency Medical Service regions and staff from the Illinois Department of Public Health. Content areas on the test are outlined below. The examination reflects the U.S. Department of Transportation National Standard Curriculum for EMT-I as adapted and approved by the Illinois Department of Public Health.

Emergency Medical Technician – Intermediate (EMT-I)

- 1. *Preparation and Professional Issues* (8 questions)**
 - A. Introduction to emergency medical care and well-being of the EMT-I
 - B. Medical, legal & ethical issues
 - C. The human body

- 2. *Pharmacology, IV Therapy, Medication Administration* (8 questions)**
 - A. Drug classifications, routes, actions, administration and security
 - B. Indications, equipment and principles for medication administration

- 3. *Airway Management and Ventilation* (9 questions)**
 - A. Upper airway complications and management
 - B. Oxygen delivery devices, indications and contraindications
 - C. Airway maneuvers, intubation techniques and special considerations

- 4. *Patient Assessment* (17 questions)**
 - A. Scene size-up and initial assessment
 - B. Transport decisions and patient history
 - C. Focused assessments and physical examinations
 - D. Ongoing assessments and clinical decision making
 - E. Communications and documentation

- 5. *Trauma* (33 questions)**
 - A. Trauma systems and mechanism of injury
 - B. Hemorrhage and shock
 - C. Burns and soft tissue injuries
 - D. Thoracic trauma
 - F. Head and spine injuries
 - E. Injuries to the eye, face and neck
 - G. Abdominal and genitalia injuries
 - H. Musculoskeletal injuries

- 6. *Medical Emergencies* (49 questions)**
 - A. Respiratory emergencies
 - B. Cardiovascular emergencies
 - D. Diabetic emergencies
 - E. Allergic reactions and envenomations
 - F. Poisonings and overdose emergencies
 - G. Neurological emergencies
 - H. Nontraumatic abdominal emergencies
 - I. Environmental emergencies
 - J. Behavioral emergencies
 - K. Gynecological emergencies

7. **Special considerations** (20 questions)
A. Obstetrical emergencies and neonatal resuscitation
B. Pediatric emergencies
C. Geriatric emergencies
8. **Operations** (6 questions)
A. Ambulance operations
B. Access, extrication and hazardous materials emergencies
C. Mass casualty incidents and START triage
D. Responses to terrorism and weapons of mass destruction

Recommended Study Materials

The following references support questions on this examination. These books may be available in public and academic libraries. They also are available from retail stores or online. All candidates should prepare for this examination by studying one or more of these references.

Bledsoe, B.E., Porter, B.S., Cherry, R.A. (2004). *Intermediate Emergency Care: Principles and Practice*, Prentice-Hall.

AAOS (2005). *Intermediate Emergency Care and Transportation of the Sick and Injured, 9th Edition*, Beck, R. And Rahm, S., editors. Jones & Bartlett.

Shade, B., Collins, T.E, Wertz, E.N., Jines, S.A. & Rothenberg, M.A. (2007). *Mosby's EMT-Intermediate Textbook for the 1999 National Standard Curriculum*. Mosby, JEMS.

Medications List for EMT-I from US DOT Curriculum

| | |
|---|------------------------|
| Aspirin | Epinephrine (1:1000) |
| Adenosine | Epinephrine (1:10,000) |
| Atropine sulfate | Furosemide (Lasix) |
| Bronchodilators (Beta 2 agonists) e.g. Albuterol | Lidocaine Hcl 2% |
| 50% dextrose | Morphine sulfate |
| Diazepam | Naloxone (Narcan) |
| | Nitroglycerine |

Abbreviations

The following abbreviations may appear in the EMT-Intermediate Examinations.

| | |
|-------|--|
| ABCs | airway, breathing/ventilation, circulatory status |
| ADA | Americans with Disabilities Act |
| ADH | antidiuretic hormone |
| AED | automated external defibrillator |
| AIDS | acquired immune deficiency syndrome |
| ALS | Advanced Life Support |
| APGAR | appearance, pulse, grimace, activity, respirations |
| ANSI | American National Standards Institute |
| ARDS | adult respiratory distress syndrome |
| ASA | aspirin |
| ATP | adenosine triphosphate (body's energy source) |
| AV | atrioventricular |

Abbreviations *(continued)*

| | |
|------------------|--|
| AVPU | Mental status responsiveness check: alert, responds to verbal or painful stimuli, unresponsive |
| BLS | Basic Life Support |
| BP or B/P | blood pressure |
| BPM | beats per minute |
| BSI | body substance isolation |
| BVM | bag valve mask |
| CAD | coronary artery disease |
| cc | cubic centimeter |
| c-collar | cervical collar |
| CDC | Center for Disease Control and Prevention |
| CHEMTREC | Chemical Transportation Emergency Center |
| CHF | congestive heart failure |
| CISD | critical incident stress debriefing |
| c-spine | cervical spine |
| cm | centimeter |
| c/o | complains of or complaining of |
| CO | carbon monoxide |
| CO ₂ | carbon dioxide |
| COBRA | Consolidated Omnibus Budget Reconciliation Act (federal legislation providing for EMTALA and continuation of health insurance) |
| COPD | chronic obstructive pulmonary disease |
| CPR | cardiopulmonary resuscitation |
| CQI | continuous quality improvement |
| D ₅ W | 5% dextrose in water |
| DCAP-BTLS | deformities, contusions, abrasions, punctures/penetrations, burns, tenderness, lacerations, swelling |
| DCFS | Department of Children and Family Services |
| DKA | diabetic ketoacidosis |
| dl or dL | deciliter |
| DNR | do not resuscitate |
| DOT | Department of Transportation |
| ED | emergency department |
| ECG or EKG | electrocardiogram |
| EMD | emergency medical dispatcher |
| EMS | Emergency Medical Services |
| ER | emergency room |
| °F | degrees Fahrenheit |
| GCS | Glasgow Coma Score |
| gtts/min | drops per minute |
| Hazmat | hazardous materials |
| HEENT | head, eyes, ears, nose and throat |
| HEPA mask | high efficiency particulate airborne mask |
| HHNC | hyperglycemic hyperosmolar nonketotic coma |
| HHNK | hyperglycemic hyperosmolar nonketotic |
| HHNS | hyperosmolar hyperglycemic nonketotic syndrome |
| HIPAA | Health Insurance Portability and Accountability Act |
| HIS | common bundle bridging AV node to bundle branches |
| HIV | human immunodeficiency virus |
| HR | heart rate |

Abbreviations (continued)

| | |
|------------------|---|
| ICS | incident command system |
| IM | intramuscular |
| IMS | incident management system |
| IV | intravenous |
| J | joules |
| JVD | jugular venous distension |
| KED | Kendrick extrication device |
| kg | kilogram |
| L | liter |
| lbs | pounds |
| LLQ | lower left quadrant |
| LMP | last menstrual period |
| L/min or lpm | liters per minute |
| LOC | level of consciousness |
| LR | lactated Ringers solution |
| LUQ | left upper quadrant |
| MCI | multiple casualty incident |
| mg | milligram |
| MI | myocardial infarction |
| min | minute |
| mL or ml | milliliters |
| mmHG | millimeters of mercury |
| MSDS | Material Safety Data Sheet |
| MVC | motor vehicle collision or crash |
| NFPA | National Fire Protection Association |
| NRM | non-rebreather mask |
| NS | normal saline |
| NSR | normal sinus rhythm |
| O ₂ | oxygen |
| OB | obstetric |
| OPA | oropharyngeal airway |
| OPQRST | onset, provokes, quality, radiation, severity, time |
| OSHA | Occupational Health and Safety Administration |
| P | pulse |
| PAC | premature atrial contraction |
| Palp | palpation |
| PASG | pneumatic anti-shock garment |
| PCO ₂ | partial pressure of carbon dioxide |
| PCR | patient care report |
| Peds | pediatrics |
| PERRL | pupils equal and round, regular in size, react to light |
| pH | partial pressure of hydrogen (hydrogen ion concentration) |
| PO ₂ | partial pressure of oxygen |
| PPE | personal protective equipment |
| PR or PRI | P-R interval |
| psi | pounds per square inch |
| PVC | premature ventricular contraction |
| QRS | ventricular depolarization wave |
| QT or QTI | QT interval |

Abbreviations (continued)

| | |
|------------------|--|
| R | respirations |
| RR | respiratory rate |
| Rule of nines | Each 9% Whole head, chest, abdomen, anterior each leg, posterior each leg, upper back, lower back/buttocks, whole arm 1% Perineum |
| RUQ | right upper quadrant |
| SA | sinoatrial |
| SAMPLE | symptoms, allergies, medications, past medical history, last oral intake, events surrounding the incident |
| SCBA | self-contained breathing apparatus |
| SIDS | sudden death infant syndrome |
| SL | sublingual |
| SpO ₂ | pulse oximetry |
| S-T | S-T segment |
| START | simple triage and rapid treatment |
| Sub-q | subcutaneous |
| T or Temp | temperature |
| TB | tuberculosis |
| TBSA | total body surface area |
| TKO | to keep open |
| TIA | transient ischemic attack |
| V-fib or VF | ventricular fibrillation |
| VS | vital signs |
| V-tach or VT | ventricular tachycardia |
| WAP | wandering atrial pacemaker |
| WMD | weapons of mass destruction |
| y/o | year old |

Part III Sample Questions

All questions on this examination are multiple-choice with one correct answer. Each question is supported by study materials cited in this bulletin. The answer key appears after these questions.

NOTE: ALL REFERENCES TO EMT IN THIS EXAMINATION REFER TO EMT-INTERMEDIATE UNLESS SPECIFICALLY STATED OTHERWISE IN THE QUESTION

- Which of these refers to actions and care that are legally allowed by state law?
 - Standard of care
 - Scope of practice
 - Duty to act
 - Medical direction

- What does the renal buffer system do when the pH of extracellular fluid rises?
 - Increase the respiratory rate and depth
 - Decrease the respiratory rate and depth
 - Excrete bicarbonate and retain hydrogen
 - Excrete hydrogen and retain bicarbonate

3. Which of these refers to placing a drug in the space between the teeth or gums and the cheek?
 - A. Oral
 - B. Buccal
 - C. Sublingual
 - D. Intralingual

4. An adult patient is unresponsive, apneic and pulseless. Which of these medications should be administered first?
 - A. Epinephrine
 - B. Lidocaine
 - C. Morphine
 - D. Atropine

5. Which of these is the respiratory center of the brain?
 - A. Cortex
 - B. Cerebrum
 - C. Cerebellum
 - D. Medulla

6. When performed correctly, endotracheal intubation
 - A. reduces the risk of aspiration.
 - B. should be performed before defibrillation.
 - C. should be accomplished in 40 seconds or less.
 - D. can only be used in spontaneously breathing patients.

7. An adult patient who is alert has a clear airway, respirations of 12 with cyanosis, and a strong radial pulse. Which of these is the most appropriate oxygen delivery device for this patient?
 - A. Nasal cannula
 - B. Bag valve mask
 - C. Endotracheal tube
 - D. Non-rebreather mask

8. What information needs to be reported regarding breath sounds?
 - A. Whether the bell or diaphragm of the stethoscope is used
 - B. Tidal volume, rate and the relationship to S1 and S2
 - C. The timing, pitch and duration of respiration
 - D. Position of the patient during the assessment

9. Which of these most accurately describes a patient with two or more adjacent ribs fractured in two or more places?
- A. Hemothorax
 - B. Flail segment
 - C. Pneumothorax
 - D. Tension pneumothorax
10. A patient from a fire has a hoarse voice, soot around the mouth and nares, respirations of 8 and stridor with decreasing LOC. Which of these would be the best intervention for this patient?
- A. Intubation
 - B. Fluid resuscitation
 - C. Ventilation by mouth to mask
 - D. Nebulized bronchodilator treatment
11. Which of the following findings is the most concerning when treating a patient with a suspected head injury?
- A. Pulse ox decreases to 93
 - B. Pulse ox decreases from 95 to 92
 - C. Glasgow Coma Score decreases from 13 to 12
 - D. Glasgow Coma Score decreases from 13 to 10
12. What are albuterol and metaproterenol?
- A. Sympatholytic bronchodilators
 - B. Sympathomimetic bronchodilators
 - C. Parasympatholytic bronchodilators
 - D. Parasympatomimetic bronchodilators
13. Which of these refers to pain that results from release of the hand during palpation of a patient's abdomen?
- A. Peritoneal irritation
 - B. Abdominal guarding
 - C. Rebound tenderness
 - D. Diaphragmatic compensation
14. Hyperventilation syndrome causes
- A. excess elimination of CO₂.
 - B. excess elimination of O₂.
 - C. excess accumulation of CO.
 - D. excess accumulation of CO₂.

15. Which pacemaker has an intrinsic firing rate of 20-40?

- A. SA node
- B. AV node
- C. Bundle of HIS
- D. Purkinje fibers

16. A patient is weak and short of breath. Assessment reveals P 48, ECG shows sinus bradycardia, R 24, B/P 88/50 and cool, pale and diaphoretic skin. Which of these is indicated for this patient?

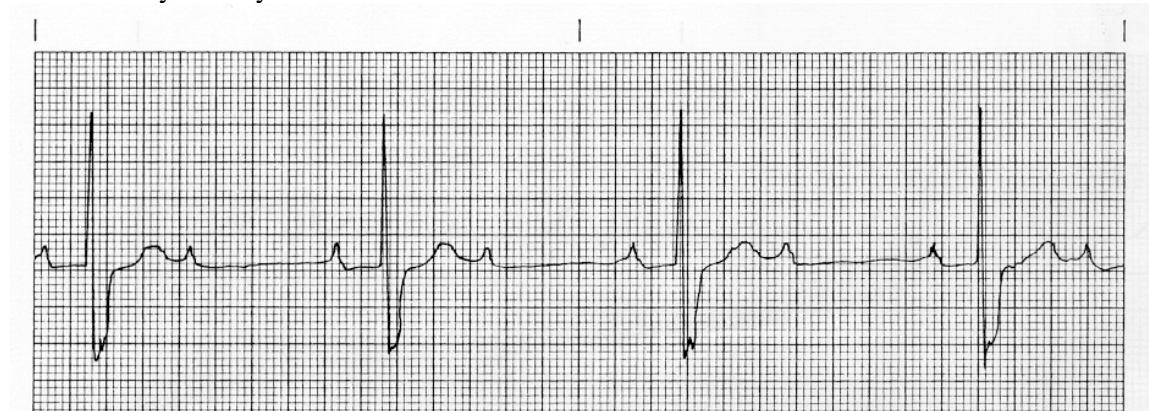
- A. Epinephrine
- B. Adenosine
- C. Atropine
- D. Lidocaine

17. Identify this rhythm.



- A. Polymorphic ventricular tachycardia
- B. Monomorphic ventricular tachycardia
- C. Premature ventricular contractions
- D. Ventricular fibrillation

18. Identify this rhythm.



- A. Complete heart block
- B. Second degree AV block Mobitz I
- C. Second degree AV block Mobitz II
- D. Sinus rhythm with premature atrial contractions

19. Which of the following correctly describes the pharmacologic action of furosemide (Lasix) when administered to a patient in pulmonary edema?
- A. It increases water retention by the kidney to improve circulation.
 - B. It decreases water retention by the adrenal glands to improve circulation.
 - C. It causes vasodilation to increase venous capacitance and decrease preload.
 - D. It causes vasoconstriction to decrease venous capacitance and improve preload.
20. Which of these is more commonly found in a pediatric patient with a high fever than in an adult?
- A. Seizure
 - B. Altered LOC
 - C. Slurred speech
 - D. Neurological deficit
21. Which body systems are most affected by narcotics and opiates?
- A. Central nervous and gastrointestinal
 - B. Gastrointestinal and respiratory
 - C. Respiratory and integumentary
 - D. Central nervous and respiratory
22. Which of these symptoms is **NOT** typically associated with a patient experiencing a renal calculi (kidney stone)?
- A. Fever
 - B. Hematuria
 - C. Unilateral flank pain
 - D. Pain radiating to the groin
23. Which of these is the primary objective when responding to a behavioral emergency?
- A. De-escalate the situation
 - B. Ensure scene safety
 - C. Notify law enforcement
 - D. Contact a psychologist
24. A patient in her third trimester of pregnancy c/o a headache, spots in her visual field and weight gain of 20 pounds in the last two weeks. Skin is pale, warm and dry with generalized edema. Breath sounds are clear bilaterally. VS: BP 160/100, P 80, RR 24. What should the EMT suspect?
- A. Retinal detachment
 - B. Hypertensive crisis
 - C. Pre-eclampsia
 - D. Eclampsia

25. A drop in the neonate heart rate below which of these indicates distress?
- A. 140 beats per minute
 - B. 120 beats per minute
 - C. 110 beats per minute
 - D. 100 beats per minute
26. Who should be questioned first when caring for a preschool child?
- A. Mother
 - B. Child
 - C. Father
 - D. Caregiver
27. Which of these is the correct way to initiate START triage?
- A. Ask patients who can walk to proceed to a designated area.
 - B. Place a black tag on all patients who are not breathing.
 - C. Assess the mental status of all patients.
 - D. Assess the pulse rates of all patients.
28. Which of these biological agents would lead to nausea, vomiting and “food poisoning” symptoms?
- A. Ricin
 - B. Anthrax
 - C. Botulism
 - D. Salmonella

Answers for EMT-I Sample Questions

- | | | | |
|-----|---|-----|---|
| 1. | B | 15. | D |
| 2. | C | 16. | C |
| 3. | B | 17. | B |
| 4. | A | 18. | C |
| 5. | D | 19. | C |
| 6. | A | 20. | A |
| 7. | D | 21. | D |
| 8. | C | 22. | A |
| 9. | B | 23. | B |
| 10. | A | 24. | C |
| 11. | D | 25. | D |
| 12. | B | 26. | B |
| 13. | C | 27. | A |
| 14. | A | 28. | D |