

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* (28 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* (39 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** (18 questions)
A. Obstetrical emergencies and neonatal resuscitation
B. Pediatric emergencies
C. Geriatric emergencies
8. **Operations** (8 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?

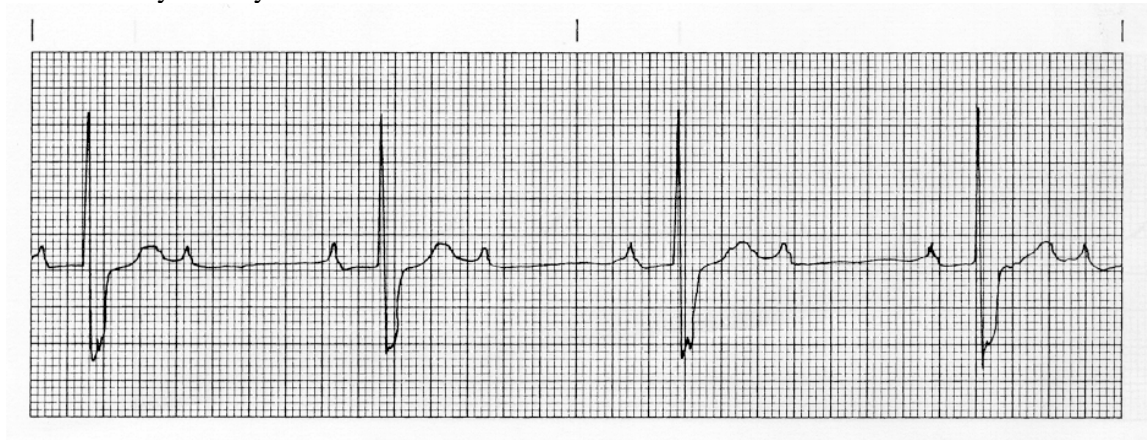
- A. Epinephrine
- B. Adenosine
- C. Atropine
- D. Lidocaine

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 |