Candidate Study Guide for the
Illinois Trauma Nurse Specialist (TNS) Examination

The following information is intended to help you prepare for the Illinois Trauma Nurse Specialist (TNS) Examination. Part I of this study guide contains general information about the profession and testing procedures. Part II provides a content outline that lists the competencies covered in this examination, identifies abbreviations that may appear in the TNS exams, and provides reference norms for the test. 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 the Trauma Nurse Specialist Course Coordinators. Certification is granted only to candidates who demonstrate sufficient knowledge of the Illinois Trauma Nurse Specialist (TNS) Program as 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. A committee of TNS course coordinators has validated each question that appears in this study guide and all TNS exams that are administered in behalf of the Illinois Department of Public Health.

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

SPECIAL ACCOMMODATIONS
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 certification as a TNS from the Illinois Department of Public Health.

MISSING AN EXAMINATION
There are no "make-up" examinations. You may re-register when you receive your score report from CTS stating “consent” and pay any additional required fees.

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 one of the regional TNS course coordinators throughout Illinois.

(c) 2014, Continental Testing Services, Inc.
SCHEDULING  After CTS approves your application, you must schedule a test date within 90 days at one of the approved PSI Test Centers. You may do so by using PSI’s online system at www.psiexams.com or by calling PSI at 1-800-733-9267. All regular testing appointments must be scheduled at least two business days prior to the desired test date. You must reapply and pay a new test fee if you do not test within the 90-day window.

PSI Test Centers in Chicago and Springfield plus centers in Carbondale, Champaign, East Peoria, Evansville, IN, Galesburg, and Glen Ellyn are proctored onsite. The remaining locations use remotely proctored testing stations that monitor candidates with three digital cameras, an on-screen chat window and a microphone. Proctors in these locations communicate with candidates on-screen during the test and pause the exam whenever unauthorized persons or activity appear on any of the three video recordings or in audio picked up by built-in sensitive microphones. The proctor will pause the exam whenever a candidate leaves the testing station or an interruption occurs. If the reason for the interruption is not confirmed as an emergency, the test will end. All other rules are the same for examinations in on-site proctored and remotely proctored locations. Each test remotely proctored station also is equipped with noise-cancelling headphones to help candidates screen out distractions if they wish to use them.

Directions and other information about each test location appear later in this study guide and are available on the PSI website.
Instructions for scheduling a test using PSI’s 800 number

PSI provides an automated system to schedule your test via the telephone without having to speak with a Customer Service Registrar.

1. Call 800-733-9267, then Press 5
2. Stay on the line until the you hear the system begin (about 30 seconds)
3. You will be asked what you want to do: schedule, confirm, or retake a test
4. You will be asked if you know your ID# (this is your social security number)
5. The system will find your record and confirm the first few letters of your last name
6. The system will confirm the test
7. You will be asked what you want to do: schedule or request a bulletin
8. The system will use your zip code to find the closest test center
9. You will be given the closest test center
10. You will be given the available dates and times when you could take the test
11. You will select the date and time and the system will schedule you
12. You will be emailed a confirmation including the date and time of your testing appointment; the email includes directions to the PSI Test Center

If you prefer to speak to a Customer Service Registrar, they are available Monday through Friday, between 6:30 am and 7:00 pm and Saturday, between 10:00 am and 4:00 pm, Central Time.

- Call 800-733-9267, Select 5, then select * (star).
- A PSI staff member will answer to help you schedule your CTS exam.

Instructions for scheduling a test online at www.psiexams.com


   New Users
   
   You can:
   » Create an account
   » Register for an examination
   » Schedule an examination

   Returning Users
   
   Sign in
   Email Address: 
   Password: 
   Start in: 
   [ Home page ]
   [ Remember me ]
   [ Sign in ]
   [ Clear ]
   [ Forget Password? ]
   [ Update email address ]
   [ If you do not have an account, please click the below link. ]
   [ Create an Account ]

   If you are a new user at PSI, click on “Create an Account”.
   
   If you have already created an account in the PSI system, type in your email address and password.

   VERY IMPORTANT STEP You must enter your email address, your password and the spelling of your name in these screens EXACTLY as you have submitted them on your application to CTS because that is what CTS sent to PSI.
2. If you already have an account in the PSI system, check the box “Check here to attempt to locate existing records for you in the system”.

3. Complete the following steps as shown below.

   - Select Government/State Licensing Agencies under Select Organization.
   - Select Illinois in Select Jurisdiction.
   - Select IL Department of Public Health in the box marked Select Account.
   - Enter your Social Security Number.
   - Click on Submit.
4. You are now ready to schedule. Click on Schedule for a test.

5. Enter your zip code or the city where you live. Click on the Search button.

You will see a list of the testing sites, starting with the one that is closest to you. Select the Test center you prefer from the list, then click on Continue. If you want to select a center that is not shown, enter the name of the city or the zip code where that test center is located.
You will now see a list of available test dates and times based on your eligibility expiration date. Click on the date and time of your choice and select Schedule.

- If there are no dates available, please call 800-733-9267 for assistance.

<table>
<thead>
<tr>
<th>Test Center</th>
<th>Available Date</th>
<th>Start Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHICAGO (ROOM A), Illinois</td>
<td>08/17/2013</td>
<td>8:30 AM</td>
</tr>
<tr>
<td>CHICAGO (ROOM A), Illinois</td>
<td>09/03/2013</td>
<td>12:30 PM</td>
</tr>
<tr>
<td>CHICAGO (ROOM A), Illinois</td>
<td>09/03/2013</td>
<td>3:00 PM</td>
</tr>
</tbody>
</table>

6. A confirmation will appear that you can print by clicking on the Print Details button. This message also includes directions to the test center.

Exam: IL Trauma Nurse (TNS)
Sponsor: ILLINOIS DEPARTMENT OF PUBLIC HEALTH
Confirmation Number: C6062003
Test Center: CHICAGO (ROOM A)
Address: CHICAGO (ROOM A)
       332 S. Michigan Avenue,
       Suite 410,
       Chicago,
       Illinois,
       USA
Test Schedule Date: 09/03/2013
Test Schedule Time: 3:00 PM

You must arrive at the test center 30 minutes before the start of your schedule time or you forfeit your examination fees and will not be allowed to take your scheduled examination.

Directions to Test Center: Take US-41S which becomes I-94E. Take the W Jackson Blvd exit (51F). Turn left on W Jackson Blvd. Turn right on S Michigan Ave.

7. You also will receive an email from PSI to confirm the test center, date and time you have selected to take your test.
8. A map to help you locate the test center also is available on the PSI website under Information Links.

<table>
<thead>
<tr>
<th>Select Jurisdiction</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Account</td>
<td>ILLINOIS DEPARTMENT OF PUBLIC HEALTH</td>
</tr>
</tbody>
</table>

### Classification
- IL Emergency Medical Technician (EMT)
- IL Emergency Medical Technician - Intermediate (EMT-I)
- IL Paramedic
- IL Trauma Nurse Specialist (TNS)

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**PSI CONFIRMS BY EMAIL**

PSI sends each candidate an email to confirm the date and time of his/her testing appointment; the email includes directions to the PSI Test Center.

**RESCHEDULING**

A testing appointment may be rescheduled up to two business days before the scheduled test date. Candidates who fail this examination must reapply after complying with the requirements for retesting based on the number of their prior attempts.

**MISSING AN APPOINTMENT**

Candidates who miss a testing appointment forfeit all fees and must reapply before they are eligible to schedule a new test date.

**TEST SCORES**

Candidates at on-site proctored test centers will receive an unofficial score report before they leave the PSI Test Center. Candidates in all other test centers will see their results on-screen at the end of the test. *None of these score reports can be used to apply for a license or certificate.* All candidates will receive their official score reports from CTS by mail after their test date. Candidates who pass will receive an application to apply for licensure with their CTS score report. Candidates who fail will receive a diagnostic report in their CTS score report indicating content areas in which they need to improve their scores.
MAPS TO PSI TEST CENTERS WITH ON-SITE PROCTORING

A larger version each map is available on the PSI website under Information Links.

PSI Test Center, Chicago

PSI Test Center
332 South Michigan Avenue, Suite 410, Chicago

Directions: From Veterans Parkway, take Wabash (IL-4) west. Turn S onto Meadowbrook Road just beyond Green Toyota (3801 S. Wabash).

PSI Test Center, Springfield

PSI Test Center
3223 South Meadowbrook Road, Suite B, Springfield

College of DuPage, Glen Ellyn
Illinois Central College, East Peoria

Test Center is Room L220 in the Library & Administration Building

Ivy Technical Community College
3501 N. 1st Avenue, Evansville, IN

Testing is in the Workforce Certification & Assessment Center
Carl Sandburg College, Galesburg

Southern Illinois University—Carbondale
900 South Normal Avenue
Woody Hall, Testing Services, B-228 or B-230

SIU-Carbondale
DIRECTIONS TO REMOTELY PROCTORED TEST LOCATIONS

These test center locations are subject to change. Check the PSI website for current details.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DIRECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advanced Medical Transport Peoria</strong>&lt;br&gt;1718 North Sterling Avenue</td>
<td>Advanced Medical Transport is located just south of Nebraska Avenue on Sterling Avenue in Peoria. A receptionist will direct candidates to the testing station.</td>
</tr>
<tr>
<td><strong>American Social Services of Uptown</strong>&lt;br&gt;2800 West Peterson Street&lt;br&gt;Chicago, IL 60659</td>
<td>ASSU is located at Peterson and California. Parking is available in the private lot behind the building or on the street (metered parking). ASSU also is served by the CTA 93 California/Dodge and 84 Peterson busses.</td>
</tr>
<tr>
<td><strong>Chicago State University</strong>&lt;br&gt;9501 S. Martin Luther King Drive&lt;br&gt;Library Building, 2nd Floor, Room 201&lt;br&gt;Chicago, IL</td>
<td>Chicago State University is located at 9501 South Martin Luther King Drive in Chicago. Testing is on 2nd floor of new Library building in Room 201. Parking on campus for $5. Nearest CTS Station: 0.6 miles from 95th Street Station on Red Line, with numerous bus routes to campus.</td>
</tr>
<tr>
<td><strong>College of DuPage – Bloomingdale Center</strong>&lt;br&gt;Town Square of Bloomingdale&lt;br&gt;162 S. Bloomingdale Road</td>
<td>The College of DuPage Bloomingdale Center is in Town Square Shopping Center south of Lake Street at Schick and Bloomingdale Roads.</td>
</tr>
<tr>
<td><strong>College of DuPage – Westmont</strong>&lt;br&gt;650 Pasquenelli Drive&lt;br&gt;Westmont, IL</td>
<td>Enter the College of DuPage Westmont Center by turning north onto Pasquenelli Drive off Ogden. Center entrance is immediately north of the bank.</td>
</tr>
<tr>
<td><strong>College of DuPage – Naperville Regional Center</strong>&lt;br&gt;1233 Richert Drive&lt;br&gt;Naperville, IL</td>
<td>The College of DuPage Naperville Regional Center is on Rickert Drive. Turn north onto Rickert Drive from 75th Street two miles west of Washington Street. From Route 59, drive east on 75th Street to Richert.</td>
</tr>
<tr>
<td><strong>College of Lake County – Grayslake</strong>&lt;br&gt;19351 West Washington Street</td>
<td>The Testing Center is in the main library on the first floor of the Grayslake campus.</td>
</tr>
<tr>
<td><strong>College of Lake County – Waukegan</strong>&lt;br&gt;33 N. Genessee Street&lt;br&gt;Second Floor, Room N203</td>
<td>Take Belvidere (Route 120), Grand or Washington east to Genesee Street. The CLC Lakeshore Campus is on Genesee north of Washington and west of Sheridan Road.</td>
</tr>
<tr>
<td><strong>F&amp;R Services, Ferguson, MO</strong>&lt;br&gt;119 Church, Suite #223</td>
<td>Exit I-70 to Florissant Road in Cool Valley. Follow Flourissant Road to Church Street in Ferguson.</td>
</tr>
<tr>
<td><strong>Global Knowledge – Schaumburg</strong>&lt;br&gt;1500 McConnor Parkway, Suite 500</td>
<td>McConnor Parkway is located north of Woodfield Mall between Golf Road and I-90 east of Meacham Road.</td>
</tr>
<tr>
<td><strong>Harper College Professional Center, Schaumburg</strong>&lt;br&gt;650 East Higgins Road, Suite 9S</td>
<td>Harper Professional Center is located just west of Plum Grove Road on Higgins Road. Woodfield Mall is about two miles northeast of the Harper Professional Center at Golf and Meacham Roads.</td>
</tr>
<tr>
<td>Institution</td>
<td>Address</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Illinois State University – Normal</td>
<td>Fell Hall 396, 100 North University Street</td>
</tr>
<tr>
<td>Joliet Junior College – Joliet</td>
<td>1215 Houbolt Road, Academic Skills Center</td>
</tr>
<tr>
<td>Millennium Center, Rockford</td>
<td>220 South Madison, Room 210 Rockford, IL</td>
</tr>
<tr>
<td>New Horizons – O’Fallon</td>
<td>1476 N. Green Mount Road, Suite 300</td>
</tr>
<tr>
<td>Oakton College – Skokie</td>
<td>7701 Lincoln Ave, Room A135</td>
</tr>
<tr>
<td>Prairie State College – Chicago Heights</td>
<td>202 S. Halsted Street, Adult Training and Outreach Center (ATOCC), Room 146 Chicago Heights, IL</td>
</tr>
<tr>
<td>Real Estate Institute – Niles</td>
<td>6203 W. Howard Street</td>
</tr>
<tr>
<td>Rend Lake College Marketplace Campus</td>
<td>Mount Vernon, 321 Potomac Blvd.</td>
</tr>
<tr>
<td>Rincon Center</td>
<td>3710 N. Kedzie Chicago, IL</td>
</tr>
<tr>
<td>South Suburban College</td>
<td>16333 S. Kilbourn Avenue, Room 5130 Oak Forest, IL</td>
</tr>
</tbody>
</table>
Part III  Testing Procedures

YOU WILL NOT BE ALLOWED TO TAKE THE EXAM IF YOU DO NOT HAVE ONE OF THESE FORMS OF ID. ALL CANDIDATE IDS ARE SUBJECT TO SECURITY SCREENING TO VERIFY THEIR AUTHENTICITY.

- A valid US Driver’s License or State ID issued by one of the 50 states or US Territories.
- A valid US Passport or Military Active Duty ID.
- A valid consular ID

All candidates must agree to abide by PSI Test Center Rules:

- Video monitoring of each candidate occurs throughout the test.
- Video tapes may be reviewed if suspicious behavior occurs during a test.
- Name and address on the candidate ID must match the CTS application and PSI candidate registration records.
- ALL NAME OR ADDRESS CHANGES MUST BE SUBMITTED TO CTS IN WRITING AT LEAST 10 DAYS BEFORE THE TESTING APPOINTMENT.

No candidate may take this test if he/she:

- Does not present required photo ID when asked
- Refuses to sign the PSI Examinee Agreement
- Does not follow all PSI Test Center rules
- Tries to use prohibited items, including but not limited to books, notes, cell phones, cameras, pagers or other electronic devices during a test
- Gives or receives help during a test or test breaks
- Tries to record or copy any test questions
- Fails to follow PSI Test Center staff instructions
- Disrupts testing for other candidates

Test Center check-in procedures include:

- Cell phones, pagers or other electronic devices are NOT PERMITTED in the testing room.
- Personal items (purses, coats, etc.) MUST be secured outside the testing room.
- A digital photograph and a digital fingerprint will be taken during check-in.
- Candidates must sign in and out of the test center for all personal breaks during testing.
- The test timer continues during any candidate’s personal breaks.

Before you start the test, you will be asked to enter your social security number. It must be identical to the social security number you submitted in your application to take this examination.
You will be required to read and agree to the security agreement before the test will begin.

**PSI SECURITY AGREEMENT FOR EXAMINATIONS**

Test Center Location: ___________________________ State: ______________

**SECURITY AGREEMENT:**

I HAVE READ THE FOLLOWING PSI SECURITY AGREEMENT AND CONSENT TO TAKE THE LICENSING EXAMINATION UNDER THE CONDITIONS STATED HEREBIN:

- I will not give or receive assistance while taking the test, including the use of unauthorized study material or unauthorized notes. I acknowledge that I have not taken any unauthorized study material or unauthorized notes into the testing area.
- I will maintain the confidentiality of the test.
- I will not have in my possession a cell phone, pager, or other unauthorized materials.
- I will inform the proctor when needed to use the rest room, but I understand that leaving the building at any time before completing the exam is prohibited.
- I understand that violating the confidential nature of the licensing test can result in severe civil or criminal penalties; invalidation of test scores; reports to the authorized agency.

Note: If a candidate refuses to consent to the conditions of this PSI Security Agreement, the proctor will notify the candidate that he/she will not be allowed to take the examination. PSI headquarters will be so informed. This form is retained as a permanent part of the candidate file.

AGREE  DISAGREE

You will be asked to confirm your name, social security number and the examination for which you are registered before you can begin.

Welcome to the Test of Essential Academic Skills V (TEAS) C!

We have the following information about you:

Name: PSI DEMO
Candidate ID: 211524005
Test: Test of Essential Academic Skills V (TEAS) C

If ANY of this information is incorrect, please contact the Proctor immediately!

If all the information is correct you may proceed by pressing the Enter key or click on the Enter button.

Enter  Back

Before you start your examination, an introductory tutorial to the computer and keyboard will be provided on the computer screen. The time you spend on this tutorial, up to 15 minutes, DOES NOT count as part of your examination time.
Taking this examination by computer does not require any computer experience or typing skills. You will use fewer keys than you use on a touch-tone telephone. All response keys are colored and have prominent characters. An illustration of the special keyboard is shown here. **You may also use the mouse.**

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**The Keyboard:**

The keyboard used for PSI’s examinations is a standard keyboard, however only a few keys are actually used for the exam. You may also use the mouse.

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**Yellow Answer Keys**

The candidate will use only the following colored keys to answer the test items. Select the key and select ENTER.

- Yellow key marked 1 for response 1.
- Yellow key marked 2 for response 2.
- Yellow key marked 3 for response 3.
- Yellow key marked 4 for response 4.
- Yellow key marked 5 for response 5.

**NOTE:** Use only Answer Keys 1-4 in this test.

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**Green ENTER Key**

The green ENTER (or NEXT) key enters your responses and moves you through the test.

You MUST press ENTER (or NEXT) to “record” your response.

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**IMPORTANT**

PRESS THE ENTER KEY OR THE NEXT KEY ONCE AND RELEASE IT IMMEDIATELY. HOLDING THE ENTER KEY OR NEXT KEY DOWN MAY CAUSE YOU TO SKIP PAST ONE OR MORE QUESTIONS.

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**Green BACK Key**
The green BACK key moves you to the previous question. Each time you press BACK, you will move backwards by one screen.

**Blue MARK Key**

The blue MARK Key allows you to mark questions for later review. Press the MARK key again to remove the MARK. Changing an answer does not remove the MARK on a question.

**Blue COMMENT Key**

The blue COMMENT Key allows you to enter comments about a question.

**Yellow ERASE Key**

The yellow ERASE Key clears (erases) any response you have entered for a question.

**Red HELP Key**

The red HELP Key provides a brief summary of each key's functions. You can press HELP at any time.

**Green GOTO Key**

The green GOTO Key gives you four options for viewing your test.

**GOTO Option 1: VIEW ALL**

VIEW ALL allows you to see all of the items on the test, starting with Question 1, one at a time. This is the default setting for the test.

**GOTO Option 2: VIEW MARKED**

VIEW MARKED allows you to see only those questions you have marked for review starting with the first MARKED question. You MUST press the MARK key again to remove the MARK. Changing an answer to a question does not remote the MARK.

**GOTO Option 3: VIEW UNANSWERED**

VIEW UNANSWERED allows you to see only those questions you have left blank, starting with the first unanswered question.

**GOTO Option 4: VIEW SPECIFIC**

VIEW SPECIFIC allows you to see any question you want to see by entering the question number.
Status Bar

The "status bar" at the top of the examination screen gives the status of the current test.

- "Question: 3 of 40" indicates you are on QUESTION number 3 out of a total of 40 items.
- "Answered" and "Unanswered" indicate you have ANSWERED 2 items, and there are 1 UNANSWERED items.
- "Marked" means you have MARKED 0 items that you may come back to review later.
- "View" indicates all items on the test are available to you for VIEWING. (see GOTO button.)
- "Time Left" indicates how many minutes you have remaining to take this test.

PRACTICE QUESTIONS

Each candidate begins with a Test Tutorial to practice answering questions and review the computer testing process.

FUNCTION BUTTONS

The “Function Bar” at the top of the screen provides mouse-click access to the features available on the current test. These also are available by using the labeled keys on the keyboard.

3. What do the stars on the United States of America's flag represent?

(Choose from the following options)

- 1. Presidents
- 2. Colonies
- 3. States
- 4. Wars
ENDING THE TEST

WHEN YOU ARE READY TO END THE TEST:

- Press the green END key when you are ready to end your test.
- The time you have left to take this test will be shown.
- You will be asked TWICE to confirm that you wish to end the exam.
- You CANNOT change any answers on this test after you confirm that you are ready to end this test.

Green END Key

Message

Are you sure that you want to END the test?
You still have 30 minutes remaining for this test.
NOTE: You CANNOT return to review or answer any questions after you END this test.

Press the "ENTER" key or click on the "ENTER" button to finish this test
Press the "BACK" key or click on the "BACK" button to return to the current test

Message

Are you sure you want to end the test?
If you are ready to END this test:
1. Please type "YES" in the box below.
2. Press the "NEXT" key or click on the "NEXT" button to end this test.

IF YOU ARE NOT READY TO END THIS TEST, PRESS THE "BACK" KEY OR THE "BACK" BUTTON TO RETURN TO THE TEST.
SCORE REPORTS

Candidates who achieve a score of at least 75 will receive a preliminary report such as this at the test center. An official CTS letter will confirm their test results and provide further instructions on obtaining your license.

Candidates who achieve a score below 75 will receive a preliminary report such as this at the test center. An official CTS letter will confirm their test results and provide further instructions about scheduling future attempts.
Part II Test Content Outline

This examination was developed in collaboration with a committee of TNS course coordinators from and staff from the Illinois Department of Public Health. Content areas on the test are outlined below. Each subtopic is a module in the TNS curriculum.

Trauma Nurse Certification (TNS)

1. **Professional Issues and Pathophysiology** (24 questions)
   A. EMS/Trauma systems development  
   B. Cardiac anatomy and physiology  
   C. Fluids and electrolytes  
   D. Neurological anatomy and physiology  
   E. Respiratory anatomy and physiology

2. **General Assessment and Management** (41 questions)
   A. Airway access  
   B. Arterial blood gases (ABGs) and acid base  
   C. Patient assessment and management  
   D. Shock and complications of post shock and trauma  
   E. Kinematics

3. **Head, Neck and Spine Trauma** (31 questions)
   A. Traumatic brain injury  
   B. Ocular and oral maxillofacial trauma  
   C. Spinal cord injury

4. **Torso and Extremity Trauma** (30 questions)
   A. Abdominal trauma  
   B. Genitourinary (GU) trauma  
   C. Musculoskeletal, vascular and soft tissue trauma  
   D. Thoracic trauma  
   E. Zonal injuries of the neck

5. **Thermal Trauma** (11 questions)
   A. Burns  
   B. Cold injury

6. **Pregnancy & Pediatric Trauma** (13 questions)
   A. Trauma in pregnancy  
   B. Pediatric trauma
Abbreviations

The following abbreviations may appear in the Trauma Nurse Specialist (TNS) Examinations.

AAA    abdominal aortic aneurism
ABCs   airway, breathing/ventilation, circulatory status
ABG    arterial blood gases
ACE    angiotensin-converting enzyme
ACS    acute coronary syndrome
ADA    Americans with Disabilities Act
ADH    antidiuretic hormone
AED    automated external defibrillator
AIDS   acquired immune deficiency syndrome
AIVR   accelerated idioventricular rhythm
ALS    Advanced Life Support
AMA    against medical advice
AMI    acute myocardial infarction
AMS    altered mental status
APGAR  appearance, pulse, grimace, activity, respirations
A&O    alert and oriented
AP     anteroposterior
ARDS   adult respiratory distress syndrome
ASA    aspirin
ATN    acute tubular necrosis
ATP    adenosine triphosphate (body’s energy source)
AV     atrioventricular
AVPU   Mental status responsiveness check:
       alert, responds to verbal or painful stimuli, unresponsive
BID    two times per day
BLS    Basic Life Support
BP or B/P blood pressure
BPM    beats per minute
BSA    body surface area
BSI    body substance isolation
BUN    blood urea nitrogen
BVM    bag valve mask
ºC     degrees Centigrade
CAD    coronary artery disease
CC     chief complaint
c-collar cervical collar
CDC    Center for Disease Control and Prevention
CHF    congestive heart failure
CISD   critical incident stress debriefing
CISM   critical incident stress management
cm     centimeter
CN     cranial nerve
CNS    central nervous system
c/o    complains of or complaining of
CO     carbon monoxide
CO₂    carbon dioxide
COBRA  Consolidated Omnibus Budget Reconciliation Act (federal legislation providing for
        EMTALA and continuation of health insurance
**Abbreviations (continued)**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>CPAP or C-PAP</td>
<td>continuous positive airway pressure</td>
</tr>
<tr>
<td>CPR</td>
<td>cardiopulmonary resuscitation</td>
</tr>
<tr>
<td>CQI</td>
<td>continuous quality improvement</td>
</tr>
<tr>
<td>CSF</td>
<td>cerebral spinal fluid</td>
</tr>
<tr>
<td>c-spine</td>
<td>cervical spine</td>
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<tr>
<td>CT</td>
<td>computed tomography</td>
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<tr>
<td>CVD</td>
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<td>5% dextrose in water</td>
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<tr>
<td>D$_{50}$W</td>
<td>50% dextrose in water</td>
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<td>DOA</td>
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<td>DOE</td>
<td>dyspnea on exertion</td>
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<td>fraction of inspired oxygen (oxygen percentage delivered)</td>
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<td>Fr</td>
<td>French (suction, urinary or chest tube catheter diameter)</td>
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Abbreviations (continued)

gm  gram
GSW  gunshot wound
gtts/min  drops per minute
GU  genitourinary
h  hour
H  hydrogen
H₂O  water
HCO₃⁻  bicarbonate
Hazmat  hazardous materials
HCO₃⁻  bicarbonate
HCT, Hct  hemocrit
HEENT  head, eyes, ears, nose and throat
HEPA mask  high efficiency particulate airborne mask
HHN  hand held nebulizer
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
HTN  hypertension
Hx  history
ICP  intracranial pressure
ICS  incident command system
ICU  intensive care unit
IDPH  Illinois Department of Public Health
ILS  Intermediate Life Support
IM  intramuscular
IMS  incident management system
IN  intranasal
IO  intraosseous
IR  intrarectal
IV  intravenous
IVP  intravenous push
IVPB  intravenous piggy back
IVR  idioventricular
J  joules
JVD  jugular venous distension
KED  Kendrick extrication device
kg  kilogram
L  liter
lbs  pounds
LLQ  lower left quadrant
LMA  laryngeal mask airway
LMP  last menstrual period
L/min or lpm  liters per minute
LOC  level of consciousness
LR  lactated Ringers solution
LUQ  left upper quadrant
Abbreviations (continued)

mA    milliamps
MAP   mean arterial pressure
mcg   microgram
mcgcts microdrops
MCI   multiple casualty incident
MDI   metered dose inhaler
mEq   milli-equivalents
MERCI Medical Emergency Radio Communications of Illinois
mg    milligram
MI    myocardial infarction
min   minute
mL or ml  milliliters
MMF   maxillo-mandibular fixation
mmHg  millimeters of mercury
MODS  multi-system organ dysfunction syndrome
MOI   mechanism of injury
mph   miles per hour
MVC   motor vehicle collision or crash
NaCl  sodium chloride
NC    nasal cannula
NIH   National Institutes of Health
NOE   nasal-orbital-ethmoid
NPA   nasopharyngeal airway
NPO   nothing by mouth
NRB   non-rebreather mask
NS    normal saline
NSAID nonsteroidal anti-inflammatory drug
NSR   normal sinus rhythm
NTG   nitroglycerin
N/V   nausea/vomiting
O2    oxygen
OB    obstetric
OG/NG tube orogastric/nasogastric tube
OPA   oropharyngeal airway
OPQRST onset, provokes, quality, radiation, severity, time
OR    operating room
Oriented X 1 oriented to person
Oriented X 2 oriented to person and place
Oriented X 3 oriented to person, place and time
Oriented X 4 oriented to person, place, time and event
OSHA  Occupational Health and Safety Administration
P    pulse
PAC   premature atrial contraction
Palp  palpation
PALS  pediatric advanced life support
PaO2  partial pressure of oxygen (arterial blood)
PASG  pneumatic anti-shock garment
PCA   Patient Controlled Analgesia
PCO2, pCO2 partial pressure of carbon dioxide
PCR   patient care report
Abbreviations (continued)

PE pulmonary embolism
PEA pulseless electrical activity
Peds pediatrics
PEEP positive end-expiratory pressure
PERRL pupils equal and round, regular in size, react to light
pH partial pressure of hydrogen (hydrogen ion concentration)
PHRN Prehospital Registered Nurse
PICC peripherally inserted central catheter
PID pelvic inflammatory disease
PO or po orally or per os (by mouth)
PO2 or pO2 partial pressure of oxygen
POD hospital designated lead hospital in a region for disasters
PPE personal protective equipment
PR or PRI P-R interval
PRBCs packed red blood cells
prn pro re nata or as needed
psi per square inch
PSVT paroxysmal supraventricular tachycardia
Pt patient
PTH parathyroid hormone
PtL Pharyngo-tracheal lumen airway (dual lumen airway)
PT/PTT/INR prothrombin time/thromboplastin time/International Normalized Ratio
PVC premature ventricular contraction
q every
QRS ECG wave representing ventricular depolarization
QT or QTI QT interval
R respirations
RA room air
RBC red blood cell
Rh rhesus factor (blood + or -)
RLQ right lower quadrant
RN Registered Nurse
R/O rule out
ROSC return of spontaneous circulation
RPF renal plasma flow
RR respiratory rate
Rt right
RTS revised trauma score
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
S&S signs and symptoms
SA sinoatrial
SAH subarachnoid hemorrhage
SAMPLE symptoms, allergies, medications, past medical history, last oral intake/last menstrual period, events surrounding the incident
SBP systolic blood pressure
SCI spinal cord injury
SIADH syndrome of inappropriate ADH
SIRS systemic inflammatory response syndrome
Abbreviations  (continued)

SL  sublingual
SOB  shortness of breath
SOMI  Sternal Occipital Mandibular Immobilizer
SpO\textsubscript{2}  pulse oximetry
S-T  or ST  S-T segment
START  simple triage and rapid treatment
STD  sexually transmitted disease
Sub-q  subcutaneous
SVT  supraventricular tachycardia
T or Temp  temperature
TBI  traumatic brain injury
TBSA  total body surface area
TENS  transcutaneous electrical nerve stimulation
TID  three times per day
TKO  to keep open
TPN  total parenteral nutrition
TSH  thyroid-stimulating hormone
TT  tetanus toxoid
Tx  treatment
U  unit
URI  upper respiratory infection
UTI  urinary tract infection
VAP  ventilator associated pneumonia
V-fib or VF  ventricular fibrillation
V\textsubscript{A}/Q  ventilation (alveolar)/perfusion
VS  vital signs
V-tach or VT  ventricular tachycardia
WAP  wandering atrial pacemaker
WMD  weapons of mass destruction
WNL  within normal limits
w/o  without
WOB  work of breathing
y/o  year old

Reference Norms

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<tr>
<th>Intrinsic pacing rates</th>
<th>SA node</th>
<th>60-100</th>
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<tr>
<td></td>
<td>AV node</td>
<td>40-60</td>
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<tr>
<td></td>
<td>Ventricles</td>
<td>20-40</td>
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<tr>
<td>PR interval</td>
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<td>0.12 – 0.20 seconds</td>
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<tr>
<td>QRS duration</td>
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<td>0.04 – 0.10 seconds</td>
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<td>Carotid pulse</td>
<td>minimum systolic BP of 60 mmHg</td>
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<td>Femoral pulse</td>
<td>minimum systolic BP of 70 mmHg</td>
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<td>Radial pulse</td>
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<td>Upper limits of pacing mA</td>
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Airway treatment questions reference AHA 2005 ACLS Guidelines
Peds fluid resuscitation volumes are calculated at 20 mL/kg
1 lb = 2.2 kg
Part III Sample Questions

All questions on this examination are multiple-choice with one correct answer. Each question is supported by the Trauma Nurse Specialist Program that is used to train TNS candidates. The answer key appears after these questions.

1. Based on the Illinois trauma center rules, which provider met the Level II requirements?

   An adult presents with an epidural hematoma and open femur fracture. The trauma surgeon declares these to be isolated injuries, consults orthopedics and neurosurgery for immediate operative intervention and signs off the case. Orthopedics arrives 55 minutes after being contacted and determines that he will repair the femur concurrently with the neurosurgical case. Anesthesia is tied up in surgery and asks that they be given an extra 60 minutes to locate a second anesthesiologist. The neurosurgeon arrives in the OR in 90 minutes. Both the craniotomy and femur repair are started 2½ hours later.

   A. Neurosurgeon  
   B. Trauma surgeon  
   C. Anesthesiologist  
   D. Orthopedic surgeon

2. What does a central venous pressure of 2 mmHg reflect in an adult with multiple trauma?

   A. Pulmonary edema or ARDS  
   B. High right atrial or vena caval pressures  
   C. Hypovolemia and need for fluid resuscitation  
   D. Myocardial ischemia from low aortic root pressures

3. Which IV solution is isotonic?

   A. LR  
   B. D50W  
   C. Mannitol  
   D. 3% NaCl

4. Which of these would cause vasodilation of cerebral blood vessels?

   A. pO₂ 45 mmHg  
   B. pO₂ 90 mmHg  
   C. pCO₂ 30 mmHg  
   D. pCO₂ 40 mmHg
5. Which of these conditions increases anatomic dead space?
   A. Upper airway obstruction
   B. Pulmonary embolism
   C. Atelectasis
   D. Epiglottitis

6. Which of these definitive airway access methods is indicated for an awake adult who presents with massive facial trauma, no detectable nasal or oral openings, and extremely labored ventilations with loud gurgling sounds?
   A. Repositioning of the mandible and oropharyngeal airway
   B. In-line orotracheal intubation
   C. Nasotracheal intubation
   D. Cricothyrotomy

7. An adult presents to the ED after being struck in the abdomen with a baseball bat. FAST exam shows a massive splenic hemorrhage. ABG results: pH 6.9, pCO₂ 42, pO₂ 80, HCO₃ 18. Base deficit – 12 mEq/L. VS: BP 94/60, P 130. What is the definitive intervention for this patient?
   A. Surgery to stop the hemorrhage
   B. Administration of blood products
   C. Drug assisted intubation and hyperventilation
   D. Administration of a large volume of 0.9 NS IV fluid

8. Which of these is included in the primary survey?
   A. Percussing the abdomen
   B. Obtaining a SAMPLE history
   C. Maintaining cervical spine control
   D. Checking extra-ocular eye movements

9. Which of these is included in the secondary survey?
   A. Assessing level of consciousness
   B. Palpating the abdomen
   C. Establishing IV access
   D. Opening the airway

10. Which condition should the TNS be alert for after an older patient is injured in a fall?
    A. Epidural hematomas
    B. Subarachnoid bleeds
    C. Intracerebral bleeds
    D. Subdural hematomas
11. Which of these is associated with an anterior compression injury to the abdomen?

A. Ruptured diaphragm  
B. Small bowel tear  
C. Renal laceration  
D. Aortic tear

12. An adult presents with a GCS of 4 and unilaterally dilated pupil following head trauma. VS: BP 94/58, P 146, R 12 and irregular. The patient is positioned supine with head elevated on two pillows. The airway is patent and O₂ was given at 6L/NC. An IV of LR was started and 2 L infused. A bolus of 250 mL of 7.5% NaCl with Dextran was given to improve BP and reduce cerebral edema. VS and LOC were assessed and recorded hourly using the GCS. Which of these complied with the Brain Trauma Foundation Guidelines?

A. Positioning  
B. Fluid resuscitation  
C. Airway and ventilatory support  
D. Continued monitoring and documentation

13. Which facial fracture is most likely to have an associated CSF leak?

A. Maxillary ridge  
B. Orbital blowout  
C. LeFort III  
D. Zygoma

14. A patient with a spinal cord injury presents with no movement in the feet or legs, no sensation over the chest or abdomen, and weak flexion of the elbows. At what level is the disruption?

A. Cervical  
B. Thoracic  
C. Lumbar  
D. Sacral

15. A spinal cord injury patient has been positioned on a backboard for the past 6 hours while being transferred to the specialty center. Which complication is the patient at HIGHEST risk to develop?

A. Skeletal dysreflexia  
B. Aspiration pneumonia  
C. Malignant hypertension  
D. Skin breakdown on bony prominences
16. Which of these interventions is indicated for an adult with penetrating abdominal trauma, hypotension and frank rectal bleeding?

A. Serial FAST exams  
B. Emergency colonoscopy  
C. Exploratory laparotomy  
D. Abdominal CT with contrast

17. Which of these is the most common MOI for anterior urethral tears in a male?

A. Self-instrumentation  
B. Straddle injury  
C. Stabbing  
D. GSW

18. An adult sustained a crush injury to the lower leg two hours ago and is now c/o intense throbbing pain in the calf. The pain worsens when the great toe is passively extended. Which intervention is most appropriate?

A. Prepare for a fasciotomy.  
B. Administer more pain medication.  
C. Elevate the leg and apply cold packs.  
D. Apply warm moist towels to enhance local tissue perfusion.

19. An adult with a flail chest develops increasing dyspnea and dropping pulse oximetry values. Initial blood gases show respiratory alkalosis. Chest x-ray reveals generalized haziness over all lung fields. What should a TNS suspect?

A. Septic shock  
B. Pleural effusions  
C. Bilateral pneumothoraces  
D. Pulmonary contusion and ARDS

20. An adult female from a MVC is conscious but confused, pale, and diaphoretic. Her airway is patent but she complains of severe dyspnea. She has a large contusion of the left chest with absent breath sounds on the left, JVD, a LUQ abdominal contusion, and pain on pelvic compression. VS: BP 70/40; rapid weak & thready femoral pulse; R 32. Which intervention is indicated?

A. PASG; inflate all compartments  
B. Needle thoracostomy to left chest  
C. 2 large bore IVs and LR infused at a wide open rate  
D. 100% O₂ per NRM, stat chest x-ray, and chest tube insertion
21. Which of these is most important when evaluating a penetrating injury to the neck?

A. Esophagrams  
B. Color flow Doppler  
C. Physical examination  
D. Lateral cervical spine xray

22. What is the most accurate indicator in the first 24 hours of effective fluid resuscitation and restored peripheral perfusion in a severely burned patient?

A. Hematocrit  
B. Hourly vital signs  
C. Hourly urine output  
D. Trends in SpO\textsubscript{2} reading

23. Which intervention is indicated for an adult with a core temperature of 88°F (31°C) and a perfusing bradycardia at 40 bpm?

A. Rewarming and volume replacement with NS  
B. CPR with compressions at 100/minute  
C. External transcutaneous pacing  
D. Atropine up to 3 mg IVP

24. Which of these is an indication for an emergency caesarean section?

A. Fetal demise at 12 weeks gestation  
B. After fetal heart tones have been confirmed  
C. Post-mortem within 20 minutes of maternal death  
D. Uterine size prevents adequate treatment of an unstable mother

25. Which of these is most useful in assessing for adequate tissue perfusion in children?

A. Signs of blood loss  
B. Urinary output  
C. Temperature  
D. SBP
### Answers for TNS Sample Questions

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<tr>
<th>Content Area</th>
<th>Question</th>
<th>Answer</th>
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