EMERGENCY MEDICAL CONSULTANTS INC.

Florida's Premier Provider Of Quality Medical Training Programs
Nationally Accredited and OSHA Programs
CEU Provider
Since 1988

PHTLS PREPARATION PACKET 8th Edition

Note: This Packet contains the latest Trauma guidelines, review information and pre-test. It is important that participants review the textbook, complete the pre-test and be familiar with the PHTLS assessment and management criteria prior to the course.

The pre-test will be collected at the beginning of the class.

Feel free to contact our office should you have any questions

(772) 878-3085 * Fax: (772) 878-7909 * Email: info@medicaltraining.cc
597 SE Port Saint Lucie Blvd * Port Saint Lucie, Florida 34984
Visit Our Website… EMCmedicaltraining.com

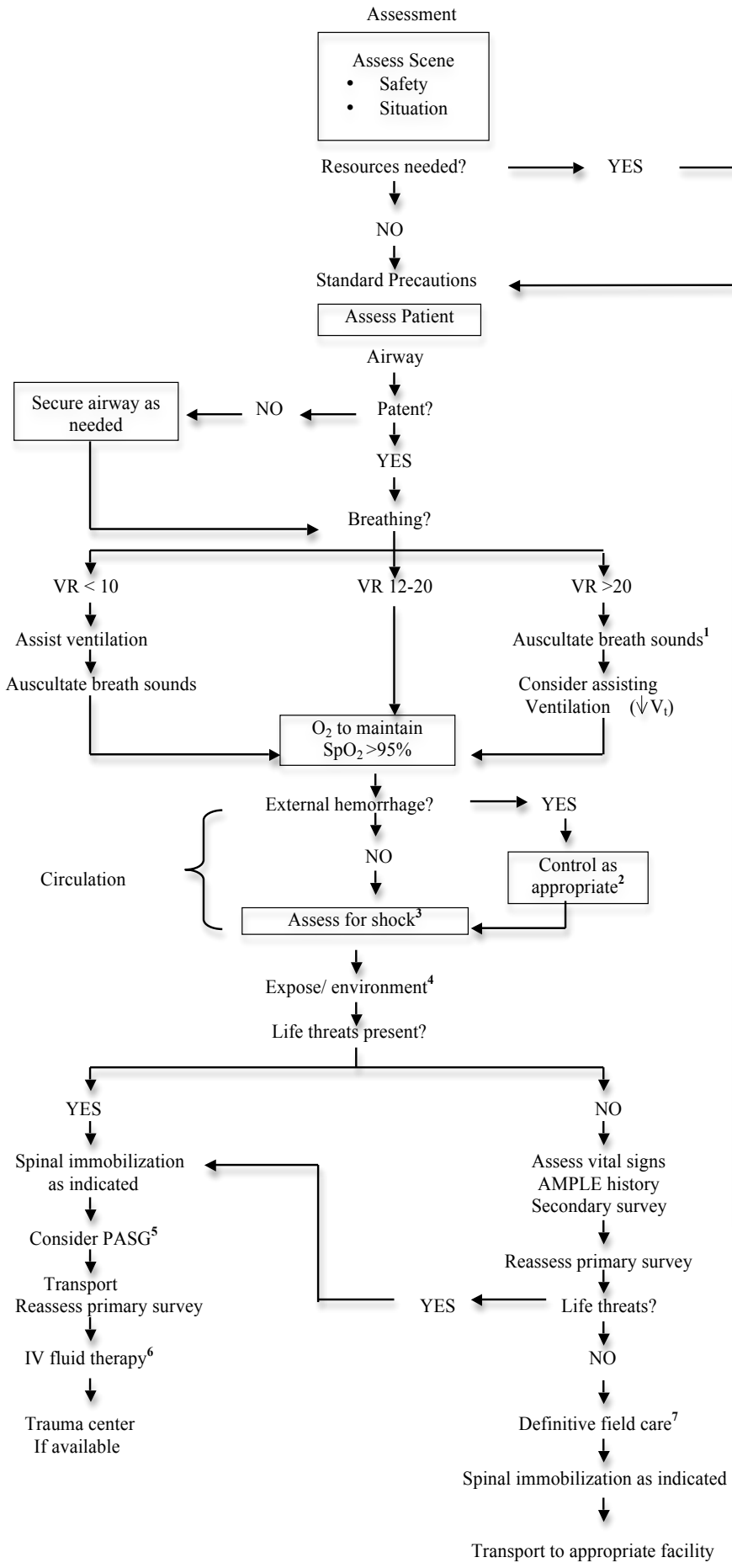
Course Plan- 2 Day

Day 1
15 minutes Welcome and Introduction
60 minutes Baselines
30 minutes Lesson 1: Introduction
15 minutes Break
45 minutes Lesson 2: Physiology of Life and Death
30 minutes Lesson 3: Scene Assessment and Primary Assessment
45 minutes Lesson 4: Airway
60 minutes Lunch
45 minutes Lesson 5: Breathing, Ventilation, and Oxygenation
60 minutes Lesson 6: Circulation, Hemorrhage, and Shock
15 minutes Break
45 minutes Patient Simulations 1A - AB
45 minutes Patient Simulations 1B - AB
60 minutes Lesson 7: Disability - Part 1
Adjourn

Day 2
30 minutes Group Discussion and Review Day One
45 minutes Lesson 7: Disability - Part 2
30 minutes Lesson 8: Secondary Assessment
15 minutes Break
45 minutes Patient Simulations 2A - CD
45 minutes Patient Simulations 2B - CD
60 minutes Lunch
30 minutes Lesson 9: Special Considerations
45 minutes Patient Simulations 3A - M&P
45 minutes Patient Simulations 3B - M&P
15 minutes Break
30 minutes Lesson 10: Summation
90 minutes Final Written Evaluation and Final Evaluation Stations
15 minutes Questions and Adjourn

The optional lecture and optional skill stations, if offered, are to be given over and above the required program as outlined above.

PHTLS Assessment Sequence



Notes for Assessment Algorithm

1. Consider pleural decompression only if ALL are present:
   - Diminished or absent breath sounds
   - Increased work of breathing or difficulty ventilating with bag-valve-mask
   - Decompensated shock/hypotension (SBP <90 mm Hg)

   **Perform bilateral pleural decompression only if patient is receiving positive pressure ventilation

2. External hemorrhage control:
   - Direct pressure/pressure dressing
   - Tourniquet

   *Consider topical hemostatic agent for prolonged transport

3. Shock: tachycardia; cool, diaphoretic, pallorous skin; anxiety; diminished or absent peripheral pulses

4. Quick check for other life-threatening conditions; cover patient to preserve body heat

5. PASG should be considered for suspected unstable pelvic fracture with hypotension

6. Transport should not be delayed to initiate IV fluid therapy. Initiate two large-bore IV lines: uncontrolled bleed SBP 80-90, controlled bleed 1-2 liters titrate SBP 80-90

7. Splint fractures and dress wounds as needed

PHTLS Shock

Types of Shock There are three types of shock:

- Hypovolemic shock
  - Vascular volume smaller than normal vascular size
    - Loss of blood and fluid
      - Hemorrhagic shock
    - Loss of fluid and electrolytes
      - Dehydration
- Distributive shock
  - Vascular space is larger than normal
    - Neurogenic "shock" (hypotension)
    - Psychogenic shock
    - Septic shock
    - Anaphylactic shock
- Cardiogenic shock
  - Pump failure

Classification of Hemorrhagic Shock

	Class I	Class II	Class III	Class IV
Blood loss (mL)	Up to 750	750-1500	1500-2000	>2000
Blood loss (% vol)	Up to 15%	15%-30%	30%-40%	>40%
Pulse rate	<100	100-120	120-140	>140
Blood pressure	Normal	Normal	Decreased	Decreased
Pulse pressure	Normal or increased	Decreased	Decreased	Decreased
Respiratory rate	14-20	20-30	30-40	>35
Urine output (mL/hr)	>30	20-30	5-15	Negligible
CNS/ mental status	Slightly anxious	Mildly anxious	Anxious, confused	Confused, lethargic
Fluid replacement	Crystalloid	Crystalloid	Crystalloid and blood	Crystalloid and blood

Signs Associated with Types of Shock

Vital Sign	Hypovolemic	Neurogenic	Septic	Cardiogenic
Skin temperature	Cool, clammy	Warm, dry	Cool, clammy	Cool, clammy
Skin color	Pale, cyanotic	Pink	Pale, mottled	Pale, cyanotic
Blood pressure	Drops	Drops	Drops	Drops
Level of consciousness	Altered	Lucid	Altered	Altered
Capillary refilling time	Slowed	Normal	Slowed	Slowed

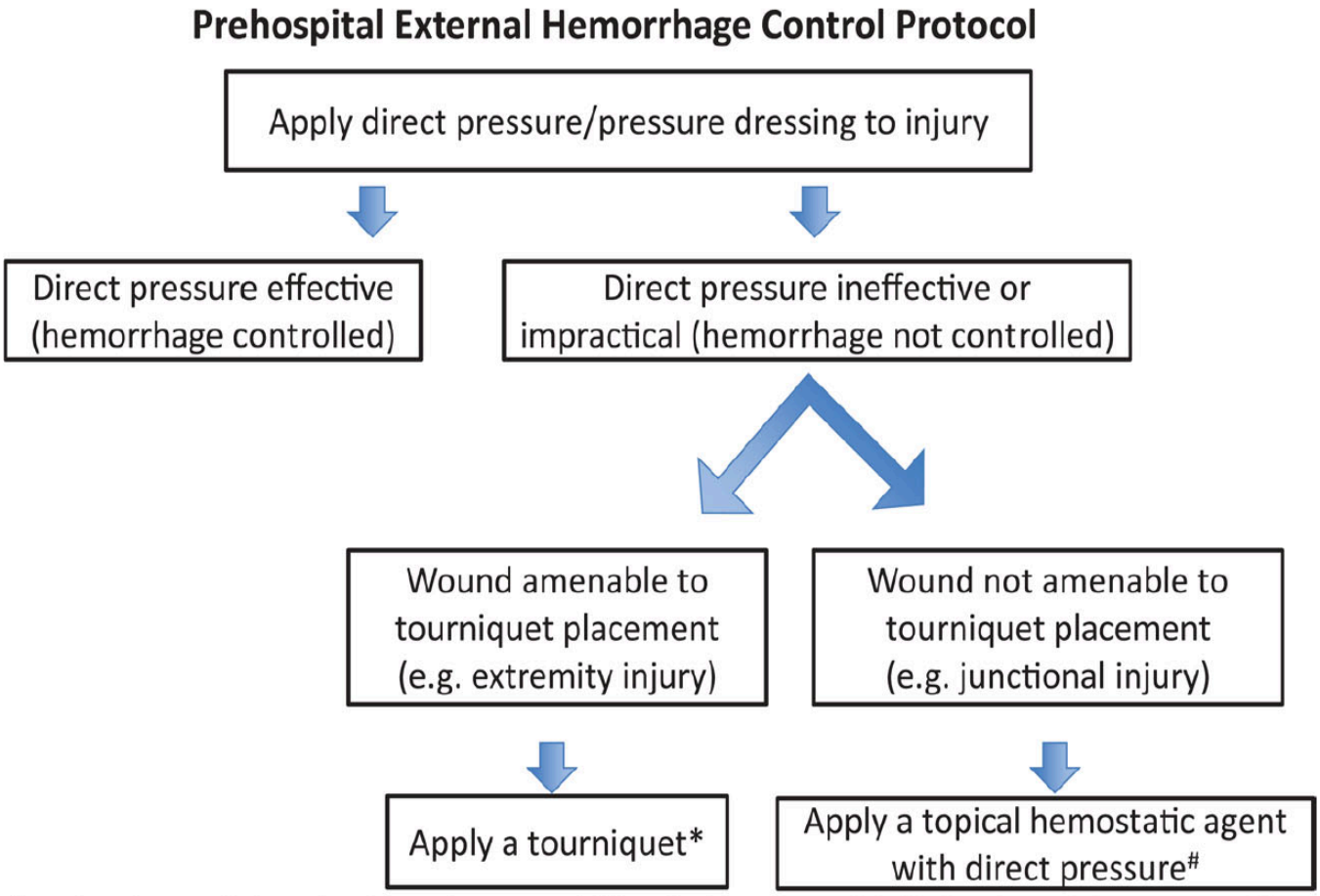
Shock Assessment

Vital Sign	Compensated	Decompensated
Pulse	Increased; tachycardia	Greatly increased; marked tachycardia that can progress to bradycardia
Skin	White, cool, moist	White, cold waxy
Blood pressure range	Normal	Decreased
Level of consciousness	Unaltered	Altered, ranging from disoriented to coma

Type of Fracture	Blood Loss Potential
Rib	125 mL
Radius or ulna	250-500 mL
Humerus	500-750 mL
Tibia or fibula	500-1000 mL
Femur	1000-2000 mL
Pelvis	1000-unlimited mL

Management

-Ensure oxygenation and ventilation
-Control hemorrhage (external or internal)
  -External- direct pressure or tourniquet or homeostatic agent
  -Internal-direct pressure (extremity immobilization/ PASG for pelvis/ low abd.)* Consider Tranexamic Acid (TXA) for uncontrollable bleeds.
-Move toward a definitive facility
-Control body temp (lower the pt)
-Fluid replacement for Class II, III, or IV shock
  -Ideally blood or packed RBC's (though not available prehospital)
  -Isotonic crystalloids (Preferable no LR), replace at 3mL's per mL's blood loss (ideally warm)
    -Controllable bleeds- 1-2 liters (adult) (20 mL/kg peds) – Titrated to SBP 80-90 mmHg
    -Uncontrolled (internal) bleeds- the least amount of fluid required to maintain SBP 80-90 mmHg



Spine Board Debate- Pg. 305

It is agreed that the long board is an appropriate device for extrication and patient movement on scene and to a stretcher, but 2015 brought about documented controversy as to its effectiveness at truly immobilizing the spine and its benefits; Key Issues:

- There are no documented studies to support that straight rigid board immobilization with a collar is beneficial.
- Some patients' anatomy actually flexes the head forward while others hyperextend the head when placed on a board.
- Patients will all begin to complain of neck and back pain if left on a hard board.
- Skin breakdown can occur at points that contact the board.
- Obese patients are at risk for positional asphyxia
- Emergency airway procedures are more difficult to perform on immobilized patients

The lack of supporting benefit and the growing potential for detrimental side effects has led many areas to decrease or completely remove the use of spine boards for anything more than extrication or movement. Instead opting for placing a collar on the patient and lying the spine on the stretcher.

At the publishing of the 8th Edition text (2016) this remains a controversial change and may be different by region.

PHTLS 8th Ed. FINAL EVALUATION STATION FLOW SHEET

Student (Leader):_____

Evaluator: _____ Scenario Number: _____

Beginning Time:_____ Ending Time: _____

Completed		
Yes	**No**	**Assessment & Treatment**
		Identify Safe Scene
		Proper Standard Precautions
		Perform Primary Survey
		Level of Consciousness/Response
		Airway
		Breathing
		Ventilation/Air Exchange
		Circulation/Perfusion
		External Hemorrhage Control
		Pulse
		Skin Condition
		Disability
		Exposure of All Critical Body Areas for Assessment
		Properly Identify Critical and Non-Critical Trauma Patients
		Use of Appropriate Spinal Immobilization Technique(s)
		Proper Use of Padding/Buttress Material
		Identification of All Life-Threatening Injuries
		Proper Treatment of All Life-Threatening Injuries
		Performed Only Lifesaving Treatment(s) While On-Scene
		Timely Transported When Indicated
		Appropriate Level Trauma Facility When Indicated
		Identification of All Non-Critical Injuries
		Proper Treatment Performed En-Route
		Completed Secondary Survey When Indicated
		Completed Scenario Within 10 Minutes On-Scene Time
		Reassessment of Patient's Conditions
		Safety Observed Throughout Scenarios
		Worked Together as A Team

Any mark(s) within the critical criteria area would indicate the need for the group to repeat the station. Only mark those comments that apply to the scenario. Please document rationale for any checked critical criteria in the notation area.

Critical Criteria

_____Failure to utilize proper standard precaution techniques
_____Failure to identify safe scene
_____Failure to perform adequate/complete primary safety
_____Failure to identify all life-threatening injuries/conditions
_____Failure to immediately treat life-threatening injuries/ conditions
_____Failure to identify critical patient based on assessment
_____Performed unnecessary treatment on-scene
_____Performed secondary survey before primary survey
_____Failure to assess and treat noncritical injuries
_____Failure to provide timely transport to an appropriate level trauma facility
_____Failure to reassess the patient's condition
_____Failure to perform scenario in a safe manner
_____Failure to perform in a team fashion
_____Failure to complete scenario within 10 minutes of on scene time

NOTES: _____

_____

_____

_____

Successful Station Completion: YES _____ NO _____

PHTLS 8th EDITION PRETEST

Please respond to each question with the most correct answer from the given choices. There is only one answer for each question.

1. You arrive at the scene of a motor vehicle collision in which a vehicle struck a tree. Which is the best indicator of potential injury?
A) Circumference of the vehicle
B) Diameter of the tree
C) Mass of the vehicle
D) Speed of the vehicle

2. The potential for death or serious injury is greatest in which of the following motor vehicle collisions?
A) Down and under
B) Ejection from vehicle
C) Lateral compression
D) Up and over

3. Bilateral femur fractures are most often associated with which type of motorcycle crash?
A) Angular impact
B) Bike-road impact
C) Head-on impact
D) Rear impact

4. Which is the preferred fluid for resuscitation of hemorrhagic shock in the prehospital setting?
A) 5% dextrose in water
B) 7.5% hypertonic saline
C) Hetastarch
D) Lactated Ringer's

5. Which is the most common cause of upper airway obstruction in the trauma patient?
A) Blood
B) Teeth
C) Tongue
D) Vomitus

6. Which is the preferred adjunct device for verifying placement of an endotracheal tube in a patient with a perfusing rhythm?
A) End-tidal CO_2 monitoring (capnography)
B) Esophageal detector device
C) Pulse oximeter
D) Stethoscope

7. Which is the most important reason to maintain an open airway in the trauma patient?
A) Prevents aspiration and pneumonia
B) Prevents hypoxemia and hypercarbia
C) Prevents snoring respirations
D) Prevents the tongue from blocking the pharynx

8. Essential airway skills include manual clearing of the airway, manual maneuvers, suctioning and which of the following?
A) Dual lumen airway
B) Endotracheal intubation
C) Laryngeal mask airway
D) Oropharyngeal airway

9. Your patient is a middle aged male who crashed his motorcycle. He is unresponsive. After opening the airway using a modified jaw thrust, you note the patient has respirations at a rate of 6. Auscultation reveals breath sounds are absent on the left side. Which of the following is the most appropriate next intervention?
A) Apply a non-rebreather mask
B) Begin ventilation with a BVM
C) Insert an endotracheal tube
D) Perform a needle decompression

10. Which best describes shock?
A) Decreased Glasgow Coma Scale (GCS)
B) Flushed, dry, hot skin combined with bradycardia
C) Generalized inadequate tissue perfusion
D) Low blood pressure combined with tachycardia

11. Your patient has a deep laceration to his antecubital fossa with significant bleeding. What is the most appropriate initial action?
A) Apply a tourniquet
B) Apply direct pressure
C) Initiate rapid transport
D) Restore blood volume

12. Hypotension of unknown etiology in a trauma patient should be assumed to result from which of the following?
A) Blood loss
B) Cardiac tamponade
C) Spinal injury
D) Tension pneumothorax

13. Which assessment is most beneficial in differentiating hemorrhagic shock from neurogenic shock in the prehospital setting?
A) Abdomen
B) Blood pressure
C) Neurologic status
D) Skin

14. The body initially compensates for blood loss through activation of which of the following?
A) Parasympathetic nervous system
B) Reticular activating system
C) Spinal reflex arcs
D) Sympathetic nervous system

15. Medication used by trauma patients for pre-existing conditions may cause which of the following?
A) Herbal preparations may enhance blood clotting
B) Anti-inflammatory agents may enhance blood clotting
C) Beta blockers may prevent tachycardia with blood loss
D) Calcium channel blockers may slow the onset of shock

16. The target blood pressure for a trauma patient with suspected intraabdominal hemorrhage is which of the following?
A) 60 – 70mm Hg
B) 80 – 90 mm Hg
C) 100 – 110 mm Hg
D) 120 – 130 mm Hg

17. Which best explains the mechanism by which gas exchange is impaired in pulmonary contusion?
A) Blood in the alveoli
B) Collapse of the alveoli
C) Compression of the lung tissue
D) Partial occlusion of the bronchi

18. Which of the following is a key finding that differentiates cardiac tamponade from tension pneumothorax?
A) Distended jugular veins
B) Equal breath sounds
C) Hypotension
D) Tachycardia

19. Your patient is a 20 year old male who struck his head on a teammate's knee while diving to catch a football. He was not wearing a helmet. He demonstrates decerebrate posturing and has a GCS score of 4. His heart rate is 58, blood pressure 180/102 and his left pupil is dilated. What is the best ventilation rate to use when managing this patient?
A) 10 breaths per minute.
B) 20 breaths per minute.
C) 30 breaths per minute.
D) 35 breaths per minute.

20. A 20 year old female was ejected from her vehicle during a high speed roll-over motor vehicle collision. She has significant bleeding from a large laceration. Your initial assessment reveals a GCS score of 7, systolic blood pressure of 70 mm Hg and pupils that are equal but respond sluggishly to light. After establishing two large bore IV lines, you should titrate the infusion rate to achieve a target blood pressure of at least
A) 60 mm Hg.
B) 70 mm Hg.
C) 80 mm Hg.
D) 90 mm Hg.

21. Which of the following is the preferred prehospital wound management for a patient with a 36% body surface area flame burn?
A) Cool moist dressings
B) Dry sterile dressings
C) Elastic bandages
D) Topical ointments

22. The most immediate life threatening condition resulting from injury to solid abdominal organs is which of the following?
A) Acute respiratory failure
B) Hemorrhage.
C) Multiple organ failure.
D) Peritonitis

23. An adult male sustained a deep laceration to his distal thigh. Bright red blood is spurting from the wound. Direct pressure is not controlling the bleeding. What is the most appropriate next step?
A) Apply a topical hemostatic agent and transport
B) Apply a tourniquet and tighten it until bleeding stops
C) Elevate the leg and apply pressure to the femoral artery
D) Maintain direct pressure and transport immediately

24. An 18-year-old female was struck by a car and has sustained an apparent left femur fracture. Communication with her is hampered because she only speaks a foreign language. Which finding, by itself, does not mandate immobilization of the cervical spine?
A) Fracture of the femur
B) Inability to communicate
C) Mechanism of injury
D) Tenderness over the cervical spine

25. During the primary survey of a trauma patient, you note that the patient is agitated and confused, and has multiple injuries from an altercation. Which of the following choices is the most appropriate first treatment priority?
A) Blood glucose determination
B) Correction of possible hypoxia
C) Full immobilization to a backboard
D) Obtain intravenous access

Pre-Hospital Trauma Life Support Provider Program
Written Evaluation Answer Sheet

Name: _____

Course Number: _____ **Date:** _____

1)	A	B	C	D	26)	A	B	C	D
2)	A	B	C	D	27)	A	B	C	D
3)	A	B	C	D	28)	A	B	C	D
4)	A	B	C	D	29)	A	B	C	D
5)	A	B	C	D	30)	A	B	C	D
6)	A	B	C	D	31)	A	B	C	D
7)	A	B	C	D	32)	A	B	C	D
8)	A	B	C	D	33)	A	B	C	D
9)	A	B	C	D	34)	A	B	C	D
10)	A	B	C	D	35)	A	B	C	D
11)	A	B	C	D	36)	A	B	C	D
12)	A	B	C	D	37)	A	B	C	D
13)	A	B	C	D	38)	A	B	C	D
14)	A	B	C	D	39)	A	B	C	D
15)	A	B	C	D	40)	A	B	C	D
16)	A	B	C	D	41)	A	B	C	D
17)	A	B	C	D	42)	A	B	C	D
18)	A	B	C	D	43)	A	B	C	D
19)	A	B	C	D	44)	A	B	C	D
20)	A	B	C	D	45)	A	B	C	D
21)	A	B	C	D	46)	A	B	C	D
22)	A	B	C	D	47)	A	B	C	D
23)	A	B	C	D	48)	A	B	C	D
24)	A	B	C	D	49)	A	B	C	D
25)	A	B	C	D	50)	A	B	C	D