

**HEALTH LEVEL SEVEN**

**SAMPLE CERTIFICATION TEST**

**HL7 2.5 STANDARD**

**CHAPTER 2 – CONTROL**

Name: \_\_\_\_\_ ID: \_\_\_\_\_

## Instructions

Put the following version number on your answer sheet: Sample Test.

1. **Which of the following is not a component of the HD data type?**
  - A. Name of Coding System.
  - B. Namespace ID.
  - C. Universal ID.
  - D. Universal ID type.
  - E. None of the above. All of the above are components of the HD data type.
  
2. **Which of the following rules apply to receiving HL7 messages and converting their contents to data values?**
  - I. Ignore segments, fields, components, subcomponents, and extra repetitions of a field that are present but were not expected.
  - II. Treat segments that were expected but are not present as consisting entirely of fields that are present but null.
  - III. Treat fields and components that are expected but were not included in a segment as not present.
    - A. I., II., and III.
    - B. I. and II. Only
    - C. I. and III. only
    - D. II. and III. only
    - E. I. only
  
3. **If the field definition calls for a field to be broken into components, which of the following rules are used:**
  - I. If more than one component is included, they are separated by the component separator.
  - II. Components that are present but null are represented by the characters "".
  - III. A component that is not present is indicated by including no characters in the component.
  - IV. Components that are not present at the end of a field must be represented by component separators.
    - A. I., II., III., and IV
    - B. I., II., and III. only
    - C. I., II., and IV. only
    - D. I., III., and IV. only
    - E. II., III., and IV. only

- 4. Which of the following statements are true?**
- I. The recommended HL7 2.x Repetition Separator character is "~"
  - II. The recommended HL7 2.x Component Separator character is "|"
  - III. The Escape Character cannot be redefined by the Message Header Segment.
- A. I., II., and III.
  - B. I. and II. only
  - C. I. and III. only
  - D. II. and III. only
  - E. I. only
- 5. Which of the following values is a possible value for Identifier type code (the fifth component of data type CX - Extended composite ID with check digit) as suggested by the standard?**
- A. Base64 - Base64 encoding as defined by MIME (Multipurpose Internet Mail Extensions) standard RFC 1521
  - B. BID - twice a day at institution-specified times (e.g., 9AM-4PM)
  - C. PI - Patient Identifier
  - D. XML - eXtended Markup Language
  - E. Z - Z Segment
- 6. A DSC continuation pointer segment could be used to continue which of the following messages?**
- I. QRY/DSR - original mode display query - immediate response (event Q01)
  - II. QRY/QCK - deferred query (event Q02)
  - III. DSR/ACK - deferred response to a query (event Q03)
  - IV. ADT/ACK - register a patient (event A04)
  - V. UDM/ACK - unsolicited display update message (event Q05)
- A. I., II., III., IV., and V.
  - B. I, II., III., and V. only
  - C. I., II., and III., only
  - D. I. and II. only
  - E. V. only
- 7. Which of the following are allowed in future 2.x versions of HL7:**
- I. New messages.
  - II. New segments.
  - III. New fields.
  - IV. New components.
- A. I., II., III., and IV.
  - B. I., II. and III. only
  - C. I., II., and IV. only
  - D. I., III., and IV. only
  - E. II., III., and IV. only

**8. Which of the following statements are true regarding the HL7 2.x data type Hierarchic Designator (HD)?**

- I. The HD enables the transmission of information for any site to act as an assigning authority (on a local or user-defined basis), even if it technically does not have the right to issue new IDs within an identification scheme.
  - II. HDs which have defined third components (defined UID types) must be unique within the series of ID's defined by that component.
  - III. The HD is used in fields that in earlier versions of HL7 used the IS data type. Thus, a single component HD (only the first component valued) will look like a simple IS data type for older systems expecting a single component in the place of the HD data type.
- A. I., II., and III.
  - B. I. and II. only
  - C. I. and III. only
  - D. II. and III. only
  - E. I. only

**9. Which of the following statements are true?**

- I. A DICOM image could be transmitted in an ED (Encapsulated Data) data type.
  - II. A value of type HD (Hierarchic Designator) could contain as one of its components, a DICOM image.
  - III. A DICOM image could be transmitted in a CD (Channel Definition) data type.
- A. I., II., and III.
  - B. I. and II. only
  - C. I. and III. only
  - D. II. and III. only
  - E. I. only

**10. If the component definition calls for a component to be broken into subcomponents, which of the following rules are used:**

- I. If more than one subcomponent is included, they are separated by the subcomponent separator.
  - II. Subcomponents that are not present are represented by the characters "".
  - III. A subcomponent that is present but null is represented by including no characters in the subcomponent.
  - IV. Subcomponents that are present but null at the end of a component need not be represented by subcomponent separators.
- A. I., II., III., and IV.
  - B. I., II., and III. only
  - C. I. and IV. only
  - D. I. only
  - E. II., III., and IV. only

**11. What data type is the following field? [^100^-^200]**

- A. CQ - Composite quantity with units
- B. NM - Numeric
- C. SI - Sequence ID
- D. SN - Structured numeric
- E. None of the above.

12. Which of the following is NOT a possible designation of optionality for a field within a segment in the segment attribute tables of the HL7 2.5 standard?

- A. R - Required
- B. O - Optional
- C. C - Conditional on the trigger event or on some other field(s)
- D. Z - User defined
- E. B - Left in for Backward compatibility with previous versions of HL7

13. Given the following abstract message definition:

```
MSH Message Header
MSA Message Acknowledgment
[ { PID Patient Identification
  [ { WDN Widget Description
    { WPN Widget Portion }
    [ WPD Widget Portion Detail ]
  }
]
}
]
```

Which of the following ordered segments in a message would be ILLEGAL?

- A. MSH MSA PID
- B. MSH MSA PID WDN WPN WPD PID PID PID
- C. MSH MSA PID WDN WPN WDN WPN WPN WPD
- D. MSH MSA PID WDN WPN WPD WPD WDN WPN
- E. MSH MSA PID WDN WPN WDN WPN WPD

14. The segment BHS contains which of the following fields?

- A. Batch Creation Date/Time
- B. Batch Message Count
- C. Batch Totals
- D. File Control ID
- E. File Creation Date/Time

15. The original mode acknowledgment protocol is equivalent to the enhanced acknowledgment protocol with which of the following field values?

- A. Just the MSH-15-accept acknowledgment type equal to "AL", the MSH-16-application acknowledgment type doesn't matter.
- B. Just the MSH-16-application acknowledgment type equal to "AL", the MSH-15-accept acknowledgment type doesn't matter.
- C. The MSH-15-accept acknowledgment type equal to "NE" and the MSH-16-application acknowledgment type equal to "AL".
- D. The MSH-15-accept acknowledgment type equal to "AL" and the MSH-16-application acknowledgment type equal to "NE".
- E. The MSH-15-accept acknowledgment type equal to "NE", the MSH-16-application acknowledgment type doesn't matter.

16. **What section of the HL7 message profile defines the number of times that each segment may occur in the message?**
- A. Dynamic definition
  - B. Interaction model
  - C. Static definition – field level
  - D. Static definition – message level
  - E. Use case model
17. **What acknowledgment code should a system return as an accept acknowledgment if the message cannot be accepted because of a sequence number error?**
- A. CA
  - B. CR
  - C. CE
  - D. CX
  - E. None of the above.
18. **Which of the following statements about message construction using standard HL7 encoding rules are true?**
- I. Segments must be constructed in the order defined for the message.
  - II. The first three characters of each Segment must be the segment ID code.
  - III. The final segment does not need to end with the Segment Terminator.
  - IV. The MSH can redefine the Segment Terminator.
- A. I., II., and III. only
  - B. I., II., and IV. only
  - C. I. and II. only
  - D. I. and IV. only
  - E. II., III., and IV. only
19. **Which of the following segments contains the field “Encoding Characters”?**
- A. DSC
  - B. ERR
  - C. MSA
  - D. MSH
  - E. NTE
20. **What is the specified maximum field length for a field of data type ID?**
- A. 20
  - B. 64
  - C. 199
  - D. 65536 (64K)
  - E. The maximum length may vary depending on the longest code in the code set.

21. Which of the following characters is the recommended HL7 2.x Field Separator?
- A. |
  - B. ^
  - C. &
  - D. ~
  - E. \
22. Which of the following is NOT an example of an HL7 2.5 trigger event?
- A. Accept Acknowledgment.
  - B. Delete Person Information.
  - C. Query sent for deferred response.
  - D. Swap Patients.
  - E. Unsolicited transmission of an observation message.
23. In documenting standard conformance, which of the following is true regarding the elements of a message profile?
- A. The use case may be documented either by means of a use case diagram or by a narrative description.
  - B. The dynamic profile is an interaction specification for a conversation between exactly 2 systems.
  - C. The Interaction Model shall be represented in both literal and graphical form.
  - D. For any one static definition there shall be exactly one dynamic definition.
  - E. None of the above is true.
24. Which of the following capabilities does the HL7 2.5 standard assume that the communications environment will provide?
- I. Ethernet network.
  - II. IP addressing of the sending and receiving sites.
  - III. Character conversion if the two machines exchanging data use different character sets.
- A. I., II., and III.
  - B. I. and II. only
  - C. II. and III. only
  - D. III. only
  - E. None. HL7 2.5 does not assume that the communications environment will provide any of these capabilities.
25. Which of the following items does the HL7 2.5 standard assumes that the communications environment will provide?
- I. Error-free transmission of all of the transmitted bytes in the correct order that they were sent in.
  - II. Character conversion if the two machines exchanging data use different character sets.
  - III. Transport of messages of unlimited length or size.
- A. I., II., and III.
  - B. I. and II. only
  - C. I. and III. only
  - D. II. and III. only
  - E. I. only

26. The segment FHS contains which of the following fields?
- A. Batch Creation Date/Time
  - B. Batch Control ID
  - C. File Batch Count
  - D. File Encoding Characters
  - E. File Trailer Comment
27. If the default encoding characters are being used, and a text field is being encoded whose content is the string "John & Mary", which of the following statements are true?
- I. The "&" must be encoded with an escape sequence.
  - II. The "&" must be stripped from the string before encoding.
  - III. The "&" must be encoded with Base64 encoding.
  - IV. The "&" must be encoded with "\T\" if the default encoding characters are being used.
  - V. The "&" must be encoded with "\A\" if the default encoding characters are being used.
- A. I. and III. only
  - B. I. and IV. only
  - C. I. and V. only
  - D. II. only
  - E. III. only
28. In documenting standard conformance, which of the following would not be an acceptable Coded Entry type in a field-level static definition?
- A. CE
  - B. CF
  - C. CNE
  - D. CR
  - E. CWE
29. Given the following HL7 field of data type MA (Multiplexed Array)  
|^2^3^4~5^^^8~9^10~~17^18^19^20|  
which one of the following statements is TRUE?
- A. This is a vector of 11 values.
  - B. The third set of samples is filled with null values.
  - C. The second sample from channel 1 has a value of 2.
  - D. The second sample from channel 4 has the value of 8.
  - E. The data is syntactically incomplete and not allowed by the standard.
30. What data type is the following field?  
|.in+4|.ti-4| 1. The cardiomedial silhouette is now within normal limits.^|.sp|.ti-4| 2. Lung fields show minimal ground glass appearance.^|.sp|.ti-4| 3. A loop of colon visible in the left upper quadrant is distinctly abnormal with the appearance of mucosal effacement suggesting colitis.\.in-4|
- A. FT - Formatted text
  - B. HT - Hypertext Markup Language
  - C. RT - Rich Text
  - D. TX - Text Data
  - E. XM - Extended Markup Language

- 31. Which of the following rules apply to receiving HL7 messages and converting their contents to data values:**
- I. Ignore segments, fields, components, subcomponents, and extra repetitions of a field that are present but were not expected.
  - II. Treat segments that were expected but are not present as consisting entirely of fields that are not present.
  - III. Treat fields valued with two double quotes ["" ] as not present.
  - IV. Treat fields and components that are expected but were not included in a segment as present but null.
- A. I., II., and III. only
  - B. I., II., and IV. only
  - C. I. and II. only
  - D. I. only
  - E. II. only
- 32. Which of the following statements are true about conformance in the HL7 V2.5 Standard?**
- I. The dynamic definition shall indicate whether an **accept** and/or **application** level acknowledgment is allowed or required.
  - II. Each message profile may have a unique identifier.
  - III. The message profile constrains the maximum size of the message.
  - IV. Publish/subscribe topics are a normative element of the message profile.
- A. I., II., III., and IV.
  - B. I. and II. only.
  - C. I., II., and IV. only.
  - D. II. and III. only.
  - E. II., III., and IV. only.
- 33. Which of the following escape sequences represents “start highlighting”?**
- A. \E\
  - B. \F\
  - C. \H\
  - D. \S\
  - E. \B\
- 34. Which of the following statements is NOT true regarding the HL7 ID number in segment attribute tables?**
- A. It is a user defined field.
  - B. It uniquely identifies the data field within the segment.
  - C. It is also known as Item #.
  - D. It can be used in the RCD (Row Column Definition) Segment of HL7 queries to identify the data element.
  - E. It is a small integer (nnnnn).

35. Given the following abstract message definition:

```
MSH    Message Header
MSA    Message Acknowledgment
[ { WDN  Widget Description
  { WPN  Widget Portion }
  [ WPD  Widget Portion Detail ]
}
]
```

Which of the following ordered segments in a message would be ILLEGAL?

- A. MSH MSA
- B. MSH MSA WDN WPN WPN
- C. MSH MSA WDN WPN WPN WPD WDN
- D. MSH MSA WDN WPN WDN WPN WDN WPN
- E. MSH MSA WDN WPN WPN WPD WDN WPN WPN WPD

**\*\*\* END OF TEST \*\*\***

Please check over your answers before turning in your test. Make sure that all your answers are accurately reflected on your answer sheet.

A passing score is 70% or more correct. For this sample exam, a score of 25 or more correct is passing. There is no penalty for guessing and no penalty for wrong answers.

Answer Key:

- 1. (A) Name of Coding System.
- 2. (C) I. and III. only
- 3. (B) I., II., and III. only
- 4. (E) I. only
- 5. (C) PI - Patient Identifier
- 6. (A) I. II., III., IV., and V. only
- 7. (A) I., II., III., and IV.
- 8. (A) I., II., and III.
- 9. (E) I. only
- 10. (D) I. only
- 11. (D) SN - Structured numeric
- 12. (D) Z - User defined
- 13. (D) MSH MSA PID WDN WPN WPD WPD WDN WPN
- 14. (A) Batch Creation Date/Time

15. (C) The MSH-15-accept acknowledgment type equal to "NE" and the MSH-16-application acknowledgment type equal to "AL".
16. (D) Static definition – message level
17. (C) CE
18. (C) I. and II. only
19. (D) MSH
20. (E) The maximum length may vary depending on the longest code in the code set.
21. (A) |
22. (A) Accept Acknowledgment.
23. (A) The use case may be documented either by means of a use case diagram or by a narrative description.
24. (D) III.
25. (A) I., II., and III.
26. (D) File Encoding Characters
27. (B) I. and IV. only
28. (D) CR.
29. (D) The second sample from channel 4 has the value of 8.
30. (A) FT - Formatted text
31. (C) I. and II. only
32. (B) I. and II. only
33. (C) \H\
34. (A) It is a user defined field.
35. (C) MSH MSA WDN WPN WPN WPD WDN