

Name: _____

Class: _____

Date: _____

Tutorial 2: Validating Documents with DTDs

Test Bank for New Perspectives on XML Comprehensive 3rd Edition

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1. One way to create a valid document is to design a document type definition, or DTD, for the document. a.

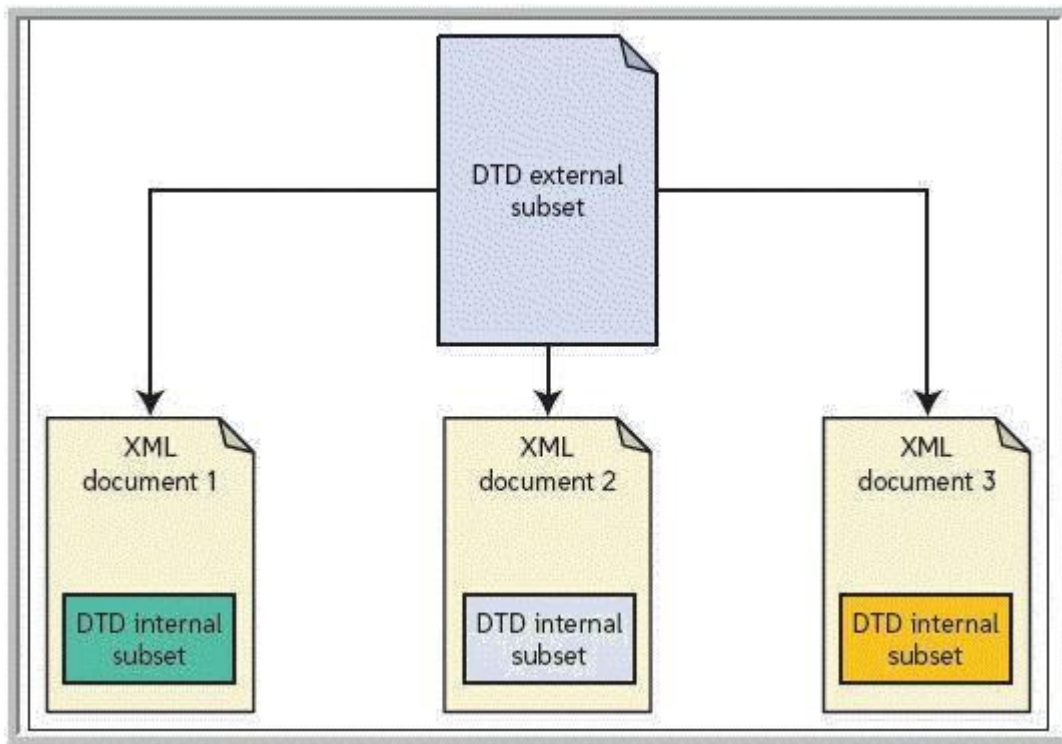
True

b. False

ANSWER: True REFERENCES:

XML 71

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2. As shown in the accompanying figure, the external subset would define some basic rules for all of the documents, and the internal subset would define rules that are specific to each document. a. True

b. False

ANSWER: True REFERENCES:

XML 73

3. Generally, elements contain parsed character data or child elements. a.

True

b. False

ANSWER: True REFERENCES:

XML 76

4. An XML element is not limited to either parsed character data or child elements. a.

True

b. False

ANSWER: True REFERENCES:

XML 83

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5. Attribute-list declarations can be located anywhere within the document type declaration. a.

True

b. False

ANSWER: True REFERENCES:

XML 86

6. Attribute values do not allow you to control the format of the character data. a.

True

b. False

ANSWER: False REFERENCES:

XML 89

7. To test for validity, an XML parser must be able to compare the XML document with the rules established in the DTD.

a. True

b. False

ANSWER: True REFERENCES:

XML 97

8. Entities can reference content found either in an external file or within the DTD itself. a.

True

b. False

ANSWER: True REFERENCES:

XML 106

9. For a DTD to validate either binary data, such as images or video clips, or character data that is not well formed, you need to work with parsed entities. a. True

b. False

ANSWER: False REFERENCES:

XML 117

10. In a valid document, at least two elements must be declared in the DTD. a. True

b. False

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ANSWER: False *REFERENCES:*
XML 75

11. A DTD can be used to enforce a specific data structure on document content.

ANSWER: True *REFERENCES:*
XML 71

```
<!DOCTYPE customers
[
]>
<customers>
  <customer custID="cust201">
    <name title="Mr.">John Michael</name>
    <address>
      <![CDATA[
        41 West Plankton Avenue
        Orlando, FL 32820
      ]]>
    </address>
    <phone>(407) 555-3476</phone>
    <email>jk@example.net</email>
    <orders>
      <order orderID="or1089" orderBy="cust201">
```

12. The DOCTYPE declaration has to be added to a document epilog as shown in the accompanying figure. ANSWER:
False - prolog *REFERENCES:* XML 75

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```
<!DOCTYPE customers
[
  <!ELEMENT name (#PCDATA)>
  <!ELEMENT address (#PCDATA)>
  <!ELEMENT phone (#PCDATA)>
  <!ELEMENT email (#PCDATA)>
  <!ELEMENT orderDate (#PCDATA)>
  <!ELEMENT itemPrice (#PCDATA)>
  <!ELEMENT itemQty (#PCDATA)>
]>
```

13. An element declaration employing the #PCDATA content model shown in the accompanying figure does not allow for child elements.

ANSWER: True REFERENCES:

XML 77

14. A modifying symbol is placed directly before the element it modifies.

ANSWER: False - after REFERENCES:

XML 80

15. It is best not to work with mixed content if you want a tightly structured document.

ANSWER: True REFERENCES:

XML 83

16. If a processor encounters more than one declaration for the same attribute, it ignores the first statement.

ANSWER: False - second REFERENCES:

XML 86

17. An attribute declared using the NAME token must have a value equal to the value of an ID attribute located somewhere in the same document.

ANSWER: False - IDREF

REFERENCES: XML 93

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18. The #FIXED attribute default is used to indicate that the use of an attribute is optional.

ANSWER: False - #IMPLIED

REFERENCES: XML 95

19. An entity whose content is found within the DTD is known as a(n) external entity.

ANSWER: False - internal REFERENCES:

XML 104

20. A(n) notation must supply a name for the data type and provide clues about how applications should handle the data.

ANSWER: True REFERENCES:

XML 117

21. A(n) _____ is a collection of rules that define the content and structure of an XML document. a. data structure b. DTD

c. XMLNS d. validity glossary

ANSWER: b REFERENCES: XML

71

22. One way to create a valid document is to design a(n) _____ for the document.

a. data structure b. DTD

c. XMLNS d. validity glossary

ANSWER: b REFERENCES: XML

71

23. A DTD is entered into the document in a statement called a document _____ declaration.

a. basis b. element

c. index d. type

ANSWER: d REFERENCES: XML

71

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```
<!DOCTYPE customers
[
]>
<customers>
  <customer custID="cust201">
    <name title="Mr.">John Michael</name>
    <address>
      <![CDATA[
        41 West Plankton Avenue
        Orlando, FL 32820
      ]]>
    </address>
    <phone>(407) 555-3476</phone>
    <email>jk@example.net</email>
    <orders>
      <order orderID="or1089" orderBy="cust201">
```

24. The DOCTYPE declaration has to be added to the document _____, after the XML declaration and before the document's root element, as shown in the accompanying figure.
- a. prolog b. epilog
c. body d. any of the above

ANSWER: a REFERENCES: XML

71

25. How many DOCTYPE declarations can there be in an XML document?
- a. 1 b. 2
c. 3 d. There is no limit.

ANSWER: a REFERENCES: XML

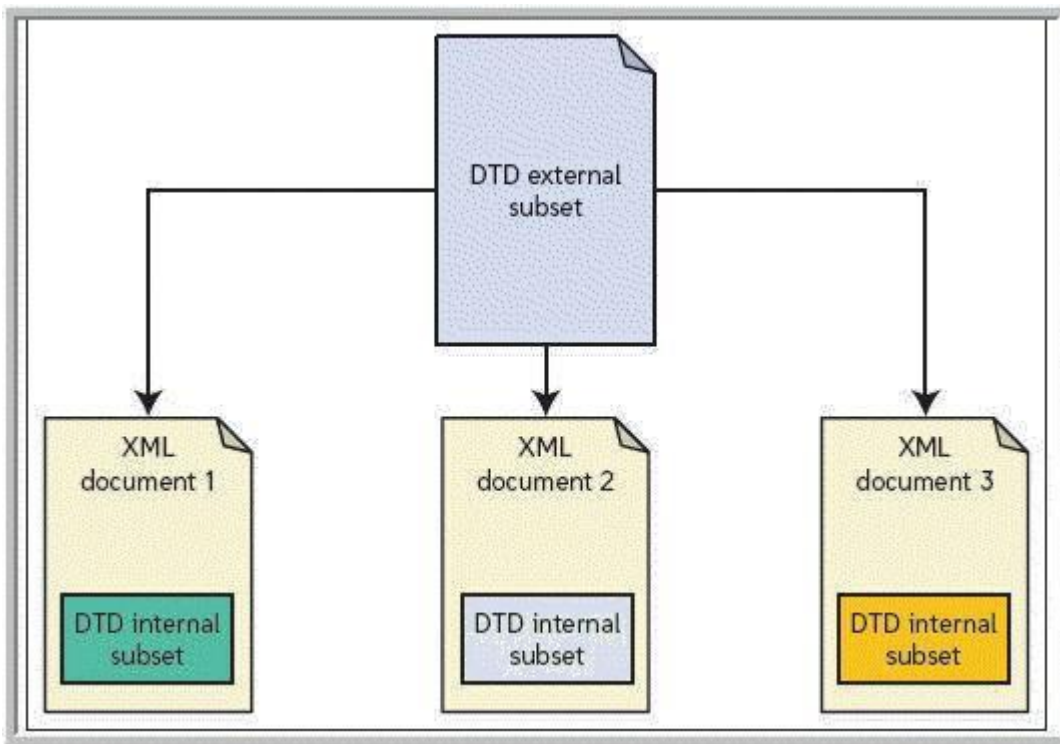
71

26. You can divide a DTD into _____ parts.
- a. two b. three
c. five d. seven

ANSWER: a REFERENCES: XML

71

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27. Which of the following is a part into which a DTD like the one in the accompanying figure can be divided?

- a. internal subset b. system identifier
c. root element d. public identifier

ANSWER: a REFERENCES: XML

71

28. Which of the following is a part into which a DTD like the one in the accompanying figure can be divided?

- a. element declaration b. strict declaration
c. external subset d. root element

ANSWER: c REFERENCES: XML

71

29. The locations of external subsets like that shown in the accompanying figure can be defined using _____ types of identifiers.

- a. two b. three
c. four d. six

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ANSWER: a REFERENCES: XML
71

30. Which of the following is a type of identifier for the location of an external subset like the one in the accompanying figure?

- a. internal b. undeclared
- c. qualified d. system

ANSWER: d REFERENCES: XML
71

31. To create a parsed entity that references content from an external file using a system _____, you use the declaration

`<!ENTITY entity SYSTEM ? "uri?">`.

- a. identifier b. qualifier
- c. index d. locator

ANSWER: a REFERENCES: XML
107

32. Most standard XML vocabularies have _____ identifiers.

- a. public b. strict
- c. system d. master

ANSWER: a REFERENCES: XML
72

33. An element _____ declaration specifies an element's name and indicates what kind of content the element can contain.

- a. content b. model
- c. type d. detail

ANSWER: c REFERENCES: XML
75

34. An element declaration can specify which of the following?

- a. an element's name
- b. what kind of content the element can contain
- c. the order in which elements appear in the document

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d. All of the these are correct.

ANSWER: d *REFERENCES:* XML

75

35. Element names can contain which of the following?

- a. reserved symbols
- b. spaces
- c. numbers
- d. All of these are correct.

ANSWER: c *REFERENCES:* XML

75

36. The `content-model` value can be one of _____ specific keywords or one of two content descriptions.

- a. five
- b. four
- c. three
- d. two

ANSWER: c *REFERENCES:* XML

76

37. The _____ content model is reserved for elements that store no content.

- a. NULL
- b. NONE
- c. EMPTY
- d. VOID

ANSWER: c

REFERENCES: XML 76

38. The _____ value for the content model in an element declaration means an element cannot store any content.

- a. EMPTY
- b. NULL
- c. NONE
- d. mixed

ANSWER: a

REFERENCES: XML 76

39. The _____ value for the content model in an element declaration means the element can contain only parsed character data.

- a. parsed
- b. mixed
- c. #PCDATA
- d. elements

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ANSWER: c REFERENCES: XML
76

40. The _____ value for the content model in an element declaration means the element can contain both parsed character data and child elements.

- a. mixed
- b. elements
- c. #PCDATA with sequence
- d. BOTH

ANSWER: c REFERENCES: XML
76

41. The _____ content model allows an element to store any type of content.

- a. OPEN
- b. mixed
- c. #PCDATA
- d. ANY

ANSWER: d
REFERENCES: XML 76

42. The declaration _____ would permit this element in an XML document: <name>Lea Ziegler</name>.

- a. <!ELEMENT products (#CHAR)>
- b. <!ELEMENT products ALL>
- c. <!ELEMENT products EMPTY>
- d. <!ELEMENT name (#PCDATA)>

ANSWER: d REFERENCES: XML
77

43. In a DTD, a _____ symbol specifies the number of occurrences of each element.

- a. specifying
- b. quantifier
- c. count
- d. modifying

ANSWER: d REFERENCES: XML
80

44. The _____ symbol indicates that an element occurs at least once.

- a. ^
- b. ?

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c. + d. &

ANSWER: c

REFERENCES: XML 80

45. While very flexible, elements with _____ content do not add much defined structure to a document.

- a. dynamic
- b. mixed
- c. static
- d. integrated

ANSWER: b REFERENCES: XML

83

46. When the _____ symbol is used with a choice list, the element can contain any number of occurrences of child elements or PCDATA, or it can contain no content at all.

- a. +
- b. *
- c. ?
- d. ^

ANSWER: b REFERENCES: XML

83

47. Which of the following is accomplished by an attribute-list declaration?

- a. It lists the names of all the attributes associated with a specific element.
- b. It specifies the data type of each attribute.
- c. It indicates whether each attribute is required or optional.
- d. All of these are correct.

ANSWER: d REFERENCES: XML

86

48. The attributes of the attribute value type _____ contain a list of entities separated by white space.

- a. ENTITY
- b. enumerated list
- c. ENTITIES
- d. ID

ANSWER: c

REFERENCES: XML 90

49. The attributes of the attribute value type _____ contain an accepted XML name.

- a. ID
- b. NMTOKEN

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c. IDREF d. ENTITY

ANSWER: b

REFERENCES: XML 90

50. The syntax for creating a conditional section is _____.

a. `<![keyword[declarations]]>` b. `<![keyword[declarations]]>`

c. `</[keyword[declarations]]>` d. `<![keyword[declarations]]>`

ANSWER: d REFERENCES: XML

116

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51. Any attribute that has been declared by the data type ID is a candidate for an ID _____.

- a. property
 - b. element
 - c. link
 - d. reference
- ANSWER: d

REFERENCES: XML 93

52. Once an ID value has been declared in a document, other attribute values can refer to it using the _____ token.

- a. name
- b. entity
- c. IDREF
- d. value

ANSWER: c REFERENCES: XML

93

53. The NMTOKEN data types cannot contain _____.

- a. hyphens
- b. colons
- c. white space
- d. Any of the above.

ANSWER: c REFERENCES: XML

94

54. The _____ attribute default means that the attribute must appear with every occurrence of the element.

- a. #MANDATED
- b. #FIXED
- c. #REQUIRED
- d. #IMPLIED

ANSWER: c REFERENCES: XML

95

55. To test for validity, an XML parser must be able to compare your XML document with the _____ rules you set up in the DTD.

- a. validity
- b. integration
- c. persistence
- d. interpolation

ANSWER: a REFERENCES: XML

97

56. If an entity's content is found within the DTD, the entity is known as a(n) _____ entity.

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- a. internal b. persistent
- c. contained d. consistent

ANSWER: a REFERENCES: XML
106

57. An entity that references content that cannot be interpreted by the XML parser is a(n) _____ entity.

- a. internal b. well -formed
- c. unparsed d. dynamic

ANSWER: c REFERENCES: XML
106

58. Content referenced by an entity can be either _____.

- a. persistent or consistent b. parsed or unparsed
- c. static or dynamic d. well-formed or unique

ANSWER: b REFERENCES: XML
106

59. XML parsers interpret the _____ symbol as a reference to another entity and attempt to resolve the reference.

- a. & b. %
- c. # d. !

ANSWER: a REFERENCES: XML
109

60. The _____ symbol is used for inserting parameter entities.

- a. & b. %
- c. # d. !

ANSWER: b REFERENCES: XML
113

61. The chunks into which a DTD can be broken with parameter entities are known as _____.

- a. components b. blurbs

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- c. links d. modules

ANSWER: d REFERENCES: XML
113

Case-based Critical Thinking Questions Case

2-1

Casey is using XML to store information about the students in the science classes that he teaches. He wants to design a DTD that he can use to validate the XML documents that he uses for this purpose, and he comes to you for help.

62. You tell Casey that he must declare the DTD using a DOCTYPE statement. Where should the DOCTYPE go?
- a. before the XML declaration
 - b. within the XML declaration
 - c. after the XML declaration and before the document's root element
 - d. after the document's root element

ANSWER: c REFERENCES: XML
71

63. Casey wants to include a declaration for an element named "note" that can contain any type of content. Which of the following is an appropriate element declaration for this element?

- a. `<!ELEMENT note (#PCDATA)>`
- b. `<!ELEMENT note>`
- c. `<!ELEMENT note ALL>`
- d. `<!ELEMENT note ANY>`

ANSWER: d REFERENCES: XML
76

64. Casey next wants to write a declaration for an element named "advanced" that he will use to record the fact that a student is advanced. This element will not contain any content. Which of the following is an appropriate element declaration for this element?

- a. `<!ELEMENT advanced NONE>`
- b. `<!ELEMENT advanced EMPTY>`
- c. `<!ELEMENT advanced>`
- d. `<!ELEMENT advanced NIL>`

ANSWER: b REFERENCES: XML
76

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65. Casey needs to declare an “address” element that can be used to store a student’s address. If he intends to store the address as parsed character data, which of the following is an appropriate declaration for this element?

- a. `<!ELEMENT address (#PCDATA)>`
- b. `<!ELEMENT address CHAR>`
- c. `<!ELEMENT address TEXT>`
- d. `<!ELEMENT address CDATA>`

ANSWER: a REFERENCES: XML

77

66. After you teach Casey about declarations for elements with child elements, he constructs the element declaration `<!ELEMENT class ((seminar | lesson | workshop), time?)>`. Given this declaration, which of the following is NOT a valid “class” element?

- a. `<class><seminar>Beginner Drawing</seminar><time>Mon. 3-4</time></class>`
- b. `<class><lesson>One-on-One Painting</lesson><time>Tues. 11noon</time></class>`
- c. `<class><seminar>Oil Painting</seminar><lesson>brushstrokes</lesson></class>`
- d. `<class><workshop>Working with Clay</workshop></class>`

ANSWER: c REFERENCES: XML

79

Case-based Critical Thinking Questions Case

2-2

Rosalind wants to add attribute declarations to her DTD, and she turns to you for information about the possible attribute types.

67. You tell Rosalind about the CDATA attribute type. Which of the following attribute values would NOT be allowed for an attribute of this type?

- a. 25.99
- b. New York, NY
- c. Bob & Jenny
- d. yellow

ANSWER: c REFERENCES: XML

90

68. Rosalind wants to define a required attribute called “semester” of an element named “course.” She wants to ensure that this attribute takes on one of three values: fall, spring, or summer. Which type of attribute should she use?

- a. CDATA
- b. an enumerated type
- c. a tokenized type
- d. a value-list type

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ANSWER: b REFERENCES: XML
90

69. You help Rosalind write the declaration of the “semester” attribute described in the previous problem. Which of the following is an appropriate declaration for this attribute?

- a. <!ATTLIST course semester (fall | spring | summer) #REQUIRED>
- b. <!ATTLIST course semester (fall, spring, summer) #REQUIRED>
- c. <!ATTLIST semester course (fall | spring | summer) #REQUIRED>
- d. <!ATTLIST semester course (fall, spring, summer) #REQUIRED>

ANSWER: a REFERENCES: XML
90

70. Rosalind wants to declare a “coursenum” attribute, the values of which will be unique within the document. Which attribute type should she use?

- a. CDATA b. UNIQUE
- c. ID d. IDREF

ANSWER: c
REFERENCES: XML 90

71. You help Rosalind write the declaration of an attribute named “credits” of an element named “course.” This optional attribute should contain character data, and a value of 4 should be used if an attribute value is not specified. Which of the following is an appropriate declaration of this attribute?

- a. <!ATTLIST credits course CDATA default="4">
- b. <!ATTLIST course credits CDATA default="4">
- c. <!ATTLIST credits course CDATA "4">
- d. <!ATTLIST course credits CDATA "4">

ANSWER: d REFERENCES: XML
90

72. External DTDs work the same way as _____ style sheets.

- a. dynamic b. external
- c. embedded d. inline

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ANSWER: b REFERENCES: XML

74

```
<!DOCTYPE customers
[
]>
<customers>
  <customer custID="cust201">
    <name title="Mr.">John Michael</name>
    <address>
      <![CDATA[
        41 West Plankton Avenue
        Orlando, FL 32820
      ]]>
    </address>
    <phone>(407) 555-3476</phone>
    <email>jk@example.net</email>
    <orders>
      <order orderID="or1089" orderBy="cust201">
```

73. A DOCTYPE declaration like the one in the accompanying figure is also known as a(n) _____.

ANSWER: DTD
document type declaration
DTD (document type declaration)

document type declaration (DTD) REFERENCES:
XML 71

74. In a(n) _____ subset, the declarations are placed in an external file that is accessed from the XML document.

ANSWER: external

REFERENCES: XML 71

75. A(n) _____ is added to the DOCTYPE declaration to provide information about the DTD to the XML parser. ANSWER:
public identifier

formal public identifier REFERENCES:

XML 72

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76. A(n) _____ specifies an element's name and indicates what kind of content it can contain. *ANSWER:* element declaration

element type declaration *REFERENCES:*

XML 75

77. A(n) _____ content model is a list of child elements that follow a defined order.

ANSWER: sequence *REFERENCES:*

XML 67

78. _____ content allows an element to contain both parsed character data and child elements.

ANSWER: Mixed *REFERENCES:*

XML 83

79. DTDs use more general numbering with a(n) _____ symbol, which specifies the number of occurrences of each element.

ANSWER: modifying

REFERENCES: XML 80

80. Attributes that are limited to a set of possible values are known as _____ types.

ANSWER: enumerated

REFERENCES: XML 91

81. A(n) _____ associates the value of an attribute with a `<!NOTATION>` declaration that is inserted elsewhere in the DTD.

ANSWER: notation

REFERENCES: XML 92

82. _____ types are character strings that follow certain rules for format and content.

ANSWER: Tokenized

REFERENCES: XML 92

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83. An attribute declared as a(n) _____ token must have a value equal to the value of an ID attribute located somewhere in the same document.

ANSWER: IDREF *REFERENCES:*
XML 93

84. _____ is ignored within a comment, so you can spread comment text over several lines without affecting DTD code.

ANSWER: White space
REFERENCES: XML 115

85. An attribute that contains a list of XML names, each separated by a blank space, can be defined using the _____ data type.

ANSWER: NMTOKENS
REFERENCES: XML 90

86. Because a DTD is not written in the XML language, XML _____ must support the syntax and language requirements needed to interpret DTD code.

ANSWER: parsers *REFERENCES:*
XML 121

87. DTDs do not support _____, and thus are of limited value in compound documents.

ANSWER: namespaces
REFERENCES: XML 121

88. Used in conjunction with an XML parser that supports data validation, a DTD can be used to accomplish what?

ANSWER: A DTD can be used to:

- Ensure that all required elements are present in a document
- Enforce a specific data structure on a document
- Prevent undefined elements from being used in a document
- Specify the use of element attributes and define their permissible values
- Define default values for attributes
- Describe how parsers should access non-XML or nontextual content

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REFERENCES: XML 71

89. What are the five possible values for `content-model` in the element declaration?

ANSWER: The `content-model` value can be one of three specific keywords (`ANY`, `EMPTY`, `#PCDATA`), or one of two content descriptions (`sequence`, `#PCDATA with sequence`), as follows:

- `ANY`: The element can store any type of content or no content at all.
- `EMPTY`: The element cannot store any content.
- `#PCDATA`: The element can contain only parsed character data. □ `Sequence`: The element can contain only child elements.
- `#PCDATA with sequence`: The element can store both parsed character data and child elements

REFERENCES: XML 76

90. What are the limitations of mixed content elements? Under what circumstances should you not use them?

ANSWER: Because they are very flexible, elements with mixed content do not add much defined structure to a document. You can specify only the names of the child elements, and you cannot constrain the order in which those child elements appear or control the number of occurrences for each element. An element might contain only text or it might contain any number of child elements in any order. For this reason, it is best to avoid working with mixed content if you want a tightly structured document. *REFERENCES:* XML 83

Identify the letter of the choice that best matches the phrase or definition. a.

- a. general entity
- b. unparsed entity
- c. external entity
- d. module
- e. & symbol
- f. internal entity
- g. parameter entity
- h. conditional section
- i. DTDs
- j. notation

REFERENCES: XML 106
XML 113
XML 113

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XML 120

XML 106

XML 109

XML 118

XML 108

XML 106

XML 116

91. References content that is either nontextual or that cannot be interpreted by an XML parser *ANSWER: b*

92. Used when you want to insert content into a DTD itself *ANSWER: g*

93. The smaller chunks into which a DTD can be broken *ANSWER: d*

94. Most standard vocabularies make these available online for inspection *ANSWER: i*

95. Draws its content from an external file *ANSWER: c*

96. Interpreted by XML parsers as a reference to another entity *ANSWER: e*

97. This supplies a name for a data type and provides clues about how an application should handle the data *ANSWER: j*

Name: _____

Class: _____

Date: _____

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98. References content to be used within an XML document

ANSWER: a

99. Includes its content in the DTD *ANSWER:* f

100. Enables you to divide a DTD into two parts: one interpreted by parsers, and one containing declarations that parsers ignore

ANSWER: h