

Please clearly circle the best answer. (2 points each)

1. **How many colors can a 24-bit image have? D**
 - a. 24
 - b. 48
 - c. 256
 - d. 2^{24}
 - e. 24^2

2. **Which of the following is *not* true about Unicode? B**
 - a. Unicode was developed to provide a single character set for all languages
 - b. Unicode is the same thing as ASCII, it was just given a new name because ASCII is an American standard
 - c. Unicode uses 32 bits per character
 - d. Unicode characters can be added to html using `&#"Unicode Character"`;
 - e. They are all true

3. **What are native formats? C**
 - a. File formats that every program can use
 - b. File formats that text editors can open
 - c. File formats that are unique to a specific program
 - d. Image formats for paint programs
 - e. Image formats for drawing programs

4. **The best color model(s) for selecting colors that work well together is(are): B**
 - a. Red, Yellow, Blue (RYB)
 - b. Red, Yellow, Blue (RYB) or Hue, Saturation, Brightness (HSB)
 - c. Red, Green, Blue (RGB)
 - d. Cyan, Magenta, Yellow (CMY) or Cyan, Magenta, Yellow and Black (CMYK)
 - e. Any color model is good for picking colors that work well together

5. **Which of these is an organizational system? A**
 - a. A topical scheme laid out with a hierarchy structure
 - b. A topical scheme used with a task-oriented scheme
 - c. A hierarchy structure combined with a hyperlink structure
 - d. An ambiguous scheme used with an exact scheme
 - e. A database structure

6. **What is a character set? D**

- a. It is the same thing as a font
- b. It is the same thing as a font-family
- c. It is a collection of glyphs
- d. It is a translation between English characters and characters of another language
- e. It is a translation between text and numbers which represent that text

7. **Which of the following is true about additive color models? A**

- a. They are used for systems which emit light
- b. They are used for systems which absorb light
- c. They are good for mixing paint colors
- d. They are often used in printing
- e. They produce black when all colors are added

8. **Given that we have n bits, which of the following is true? B**

- a. The numbers will range from $0 - 2^n$
- b. The numbers will range from $0 - 2^n - 1$
- c. The numbers will range from $0 - 2^n$
- d. The numbers will range from $0 - n^2$
- e. The numbers will range from 0 to $n^2 - 1$

9. **64 bits is equivalent to how many bytes? C**

- a. 2
- b. 4
- c. 8
- d. 32
- e. 64

10. **Vector images A**

- a. Scale more smoothly than bitmapped images
- b. Are stored in the same way as bitmapped images
- c. Are better than bitmapped images for transparency
- d. Can be displayed directly on your monitor
- e. Both a and c

11. **Given the following, what is the resulting style? E**

External Style Sheet: color: #FCC; background-color: navy;

Inline Style: color: #C9F; font-size: 200%; font-weight: bold;

Browser Default: font-family: Arial; color: #000; background-color: #FFF;

Internal Style Sheet: font-family: Times; font-size: 150%;

- a. Font-family: Arial; color: #000; background-color: #FFF; font-size: 150%; font-weight: bold
- b. Font-family: Times; color: #FCC; background-color: navy; font-size: 200%; font-weight: bold;
- c. Font-family: Times; color: #C9F, font-size: 200%; font-weight: bold;
- d. Font-family: Times; color:#C9F; background-color: #FFF; font-size: 200%; font-weight: bold;
- e. None of the above

12. What does the “clear: left” property do? **Question removed**
- Items with this property are placed below all other items on the web page
 - Items with this property have their formatting cleared
 - Items with this property appear to the right of any floated content above it
 - Items with this property will appear to the left of any floated content above it
 - Items with this property will appear below any floated content above it
13. Which of these is an example of a triadic color harmony scheme? **B**
- Navy blue, light blue, orange, white, gray, black
 - Dark green, light green, dark purple, orange, white, black
 - Dark green, light green, purple, dark blue, white, gray, black
 - Dark blue, dark red, dark green, white, black
 - Dark blue, blue, light blue, white, gray, black
14. What is the World Wide Web? **D**
- It is the same thing as the Internet
 - It is a vast network of connected computers sharing files
 - It is a vast network of web pages linked using hyperlinks
 - It is a vast network of files linked using hyperlinks
 - Both b and c
15. What should you consider when choosing a file format for images? **B**
- Type, portability, compression, and transparency
 - Bitmap or vector graphic, portability, transparency, color depth and lossy, lossless, or no compression
 - Type, bitmap or vector graphic, transparency, compression, and color depth
 - Bitmap or vector graphic, alpha mask, and lossy, lossless, or no compression
 - Type, portability, compression, alpha mask or simple transparency, color depth

Short Answer. No More than two sentences each unless otherwise specified.

16. What is dithering and why is it used? (5 points)

Dithering is the process of using two or more different colored pixels in a pattern to produce a color in between for images. It is used to reduce the number of colors in the palette. To produce a color not found in the palette. If the color is not supported by the file format chosen.

17. Briefly describe how web crawlers work.

Web crawlers start with an initial list of pre-determined web pages which they visit and cache. They then add all of the pages which are linked from this page to their list of pages to visit and cache. This process continues recursively.

Or you could mention the 4 policies: selection, re-visit, politeness, and parallelization along with the notion of visiting and caching pages.

18. Describe 2 reasons why you should use logical markup whenever possible?

Allows you to easily change the look of your page because you can change the appearance of all of the same type of element by editing just a few lines.

Helps search engines to properly classify your web page.

Provides structural clues for non-traditional browsers such as text-only browsers and text-to speech browsers.

Allows developers to easily provide alternate styles of their pages, especially in the case of catering to special needs users.

19. Briefly describe the 4 design principles. Summarize the principle in one sentence and provide an example relating to web pages in a second sentence. (2 sentences for each principle). (8 points)

1. Proximity: Put related items close together on a page and separate unrelated items. In web pages a simple example would be to group links related to account information separately from links related to shopping for a product.

2. Alignment: Creating strong, virtual horizontal or vertical lines on a page. Using strong vertical lines, like on a news website, not only looks like a paper version of a newspaper but helps the user to easily be able to find and read articles.

3. Consistency: Repeating elements from one page to the next within a site to provide cohesion between pages. An example of this would be to use the same colors or navigation bars on all the pages in a site.

4. Contrast: If items are different, make them really, really different. Headings should be larger than standard text and links should look like links and not plain text.

20. Convert the number 107_{10} to base 3. Show all work. (6 points)

10222_3

21. Convert the number 11010011_2 to decimal. Show all work (6 points).

211_{10}

22. Briefly describe 2 ways in which classes and identifiers in CSS differ. (5 points).

Classes in CSS can be used multiple times on a single page, while identifiers can only be used once per page. Because identifiers are only used once on a page, they can be used as fragments or anchors to “jump” users from one part of the page to another.

23. Write a generic class as a rule for an external stylesheet which will turn text to the color blue, double the size of the font, and change the font family to Times. (5 points).

```
.bigblue {  
  
    color: blue;           (or #00F, or #0000FF)  
    font-size: 200%;  
    font-family: Times;  
}
```

24. Write HTML to produce the following table: (10 points)

apple	
pear	Cherry
	Grapefruit

```

<table>
  <tr align = "center">
    <td colspan = "2"> apple</td>
  </tr>
  <tr align = "center">
    <td rowspan = "2"> pear</td>
    <td> Cherry</td>
  </tr>
  <tr>
    <td>Grapefruit</td>
  </tr>
</table>

```

***Note: align can also go in the <td>, was not part of the mark**

***Bonus Question. This question is worth up to 3 points. Your midterm mark cannot exceed 100. (Don't forget there is another marked exam question on the other side of this page).**

What is XML and what is it used for? (Up to 3 points)

XML stands for eXtensible Markup Language. It is used to markup data. It can be used to describe data of all types. It is stored as a plain text file. Created as a medium for transmitting data from one system to another, especially via the Internet.