Intro to Engineering Design Practice Final Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define the following elements of Design

1. Point: Has position but no dimension. Used to indicate location.
2. Line: Has only length, used for boundary, volume, perspective and depth.
3. Color: Includes base color, value and saturation
4. Value: Relative lightness or darkness of a color, object or shape.
5. Shape: a 2D area enclosed by lines or curves
6. Form: A 3d volume or solid
7. Space: Areas between and around parts of an image
8. Texture: The surface look or feel

Define the following Principles of Design

1. Balance: The distribution of elements within a design
2. Emphasis: Used to draw attention to one area
3. Contrast: The degree of relative difference between elements.
4. Rhythm: Repeated use of line, shape, color, texture or pattern
5. Proportion: Comparative relationship between elements of a design with respect to size.
6. Unity: The consistent use of design elements
7. Economy: Use of the bare minimum of elements.

Multiple Choice

1. \_B\_\_
2. \_C\_\_
3. \_C\_\_
4. \_D\_\_
5. \_C\_\_
6. \_A\_\_
7. \_C\_\_
8. \_C\_\_
9. \_D\_\_
10. \_A\_\_
11. \_A, B, C, D\_\_
12. \_C\_\_
13. \_B\_\_
14. \_B\_\_
15. \_D\_\_
16. \_A\_\_
17. \_C\_\_
18. \_B\_\_
19. \_C\_\_
20. \_D\_\_
21. \_C\_\_
22. \_B\_\_
23. \_A\_\_

Line Types

* 1. \_A\_\_\_\_\_\_\_\_\_\_\_
	2. \_F\_\_\_\_\_\_\_\_\_\_\_
	3. \_B\_\_\_\_\_\_\_\_\_\_\_
	4. \_D\_\_\_\_\_\_\_\_\_\_\_
	5. \_G\_\_\_\_\_\_\_\_\_\_\_

Reading Dimensions

 2.1 \_D\_\_\_\_\_\_\_\_\_\_\_

 2.2 \_B\_\_\_\_\_\_\_\_\_\_\_\_

 2.3 \_E\_\_\_\_\_\_\_\_\_\_\_

 2.4 \_C\_\_\_\_\_\_\_\_\_\_

 2.5 \_A\_\_\_\_\_\_\_\_\_\_\_\_

Engineering Design **(Answers may vary)**

1) Defining the problem

 a) Constraints: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b) Specifications: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Generated Concept:



3) Develop solution

 Decision Matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Specs/Constraints |  |  |  |  | Totals |
| Proposals |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

 Selection Proposed and why: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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