1 SAFETY THROUGH DESIGN

QUIZ 1 (20 POINTS TOTAL)

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1.	A safety through design program can be isolated from normal business planning. a. true b. false
2.	Change is difficult and conformity is the norm. a. true b. false
3.	Zero risk is an attainable concept, and something for which every company can strive. a. true b. false
4.	Risk reduction costs should be considered separately from the hazard analysis/risk assessment exercise. a. true b. false
5.	If the design of a work task is overly stressful, training and behavioral modification will reduce the frequency of injuries. a. true b. false
6.	Assigning a quantitative hazard probability is generally not possible early in the design process. a. true b. false
Mult	iple Choice (6 points)
7.	To understand how far an organization has progressed in safety through design, the safety practitioner should consider proposing a as a standard of excellence against which other similar things are measured or judged. a. checkpoint challenge b. company history c. benchmarking initiative d. none of the above

8.	As defined in the text, is/are a set of perceptions, values, beliefs, and assumptions that determines how individuals see reality and affects how they behave.
	a. culture
	b. standards
	c. focus
	d. none of the above
9.	In the design process there is one exceptionally important and highly variable factor that must be considered. What is that factor?
	a. the cost of raw materials
	b. the person who will use the product
	c. the role of the safety practitioner
	d. worker behavior
10.	Because many companies still adopt a/an mode in designing for safety, management and safety professionals tend to focus on behavior modification or training as solutions when the problem is
	workplace or work methods design.
	a. proactive
	b. reactive
	c. behavioral
	d. ergonomic
11.	If the design of the work is overly stressful or if the work situation encourages employees to take
	risks, the causal factors of incidents are deemed to be
	a. employee errors
	b. systemic
	c. the result of unsafe acts
	d. none of the above
12.	The redesign of a manufacturing plant is the best time to hazards.
	a. eliminate
	b. analyze
	c. anticipate
	d. all of the above
	e. b and c only
Shor	t Answer (7 points)
13.	What is meant by the term safety through design?

14.	In the Safety through Design Model, what aspects are considered "upstream"?
15.	What are the benefits of safety through design?
16.	Define risk and safety as used in the chapter.
17.	What is a risk assessment?
18.	What are some ways for modifying shock-concentrating surfaces?
19.	List three objectives all companies should follow when developing a safety through design process.

Short Essay (1 point)

20. To achieve the greatest effectiveness in hazard avoidance, elimination, or control, companies should apply the Order of Design Precedence in all design and redesign processes. Name and describe (in order) these five priorities.

QUIZ 2 (20 POINTS TOTAL)

True/False (6 points)

1.	In a proactive	mode,	companies	look	at d	lesign	issues	only	after	an ir	ncident	has	occurred	1.
	a. true													

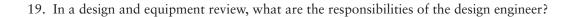
- b. false
- 2. A work situation is considered error provocative when people make more errors than they do with other work situations.
 - a. true
 - b. false
- 3. A company's resources will never be sufficient to eliminate every risk.
 - a. true
 - b. false
- 4. Companies can disregard ergonomics in the initial design process as such factors change over time.
 - a. true
 - b. false
- 5. A confined space should be designed so that maintenance and inspection can be performed from the outside.
 - a. true
 - b. false
- 6. A central point in the work of Alan Swain is that, "The improvement in system performance that can be realized from the redesign of equipment is usually greater than the gains that can be realized from the selection and training of personnel."
 - a. true
 - b. false

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	The method of hazard assessment utilizes a series of questions focused on equipment, processes, materials, and operator capabilities and limitations, including possible operator failures, to determine that the system is designed to a level of acceptable risk. a. What Now b. Who Me c. What If d. none of the above
8.	According to the safety through design checklist, a should be designed for continuous human occupancy, prompt egress, ease of ingress, and elimination of hazardous atmosphere wherever possible. a. public rest room b. confined space c. washing facility d. none of the above
9.	When designing with an eye toward ergonomics, design for theth andth percentile. a. 5 and 95 b. 10 and 90 c. 50 and 95 d. none of the above
10.	If hazard analyses and risk managements are to be effectively made, those assigned the responsibility must be skilled in the use of the special analytical techniques available. At least such hazard techniques have been developed. a. 25 b. 250 c. 1,000 d. 1,500
11.	Which of the following is considered a barrier to protect people, property or the environment from exposure to unwanted energy or hazardous material release? a. slip-resistant work surfaces b. using designs needing less maintenance c. padding low overheads d. directed venting
12.	Which of the following is used to slow down the release of energy or hazardous material? a. error-forgiving road margins b. personal protective equipment

c. noise controlsd. rounded corners

Short Answer (7 noints)
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	What factors or elements does the term design processes apply to?
14.	At what critical points can the safety practitioner influence the design of the workplace and work methods?
15.	What is the mission statement of the Institute for Safety Through Design?
16.	Design characteristics that increase the probability of error include a job, situation, or system that
17.	What steps might an effective hazard analysis/risk assessment scenario cover?
18.	In a design and equipment review, what are the responsibilities of the safety, health, and environmental professional?



Short Essay (1 point)

20. In the space provided below, draw a figure of the safety through design model. Explain how such a model addresses hazards and risks in the design process.