25 HOT WORKING OF METALS

QUIZ 1 (20 POINTS TOTAL)

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True	/False (5 points)
1.	One way to minimize the hazards involved with using solvents in foundries is to use less hazardous
	chemicals in place of more hazardous ones.
	a. true
	b. false
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2.	Preventive maintenance programs for hoists and cranes should ensure that operations are much safer
	than the minimum requirements of existing regulations.
	a. true
	b. false
3.	When working in sandblast rooms, employees should be equipped with air-supplied hoods and full
	body protection.
	a. true
	b. false
4.	A manually operated key-driving ram provides a greater margin of safety than a pneumatic one.
	a. true
	b. false
5.	Drop hammers should never be operated when dies are cold.
	a. true
	b. false
Mult	iple Choice (6 points)
	Which of the following is not true of ladles?
0.	a. No ladle can hold more than 2,000 lb.
	b. Ladles can be gear-operated, mechanically operated, or electrically operated.
	c. Ladles should be thoroughly dried and heated before use.
	d. Manually operated safety locks should be provided with ladles.
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7.	If the concentration of carbon monoxide is more than around a cupola, an engineering assess-
	ment should be considered.
	a. 150 ppm
	b. 175 ppm
	c. 200 ppm
	d. 225 ppm
8.	Which of the following types of molding machines requires a shield to protect against pinch points?
	a a straight molding machine

b. a semiautomatic molding machine c. an automatic molding machine

d. all of the above

9.	When designing a system to collect magnesium dust, which of the following should be avoided? a. using filters b. using water to wash the dust into a sludge pit c. cleaning sludge pits or pans d. using the shortest possible ventilation route
10.	Which of the following is true of hot-trim dies and punches? a. They are made from a high-carbon, high-chrome, molybdenum steel. b. They are hardened and drawn to a 60 to 62 Rockwell C hardness. c. They are hardened and drawn to a 62 to 64 Rockwell C hardness. d. They are made from medium-carbon steels with cutting edges that have been hard faced.
11.	Which of the following nondestructive testing methods is used primarily to measure thickness? a. reflection method b. resonant-frequency method c. through-transmission method d. radiography
Shor	t Answer (7 points)
12.	How can a foundry determine the need for ventilation controls?
13.	During their downtime, workers sometimes rest under the charging platforms for cupolas. What is dangerous about this habit?
14.	What kinds of hazards are associated with core and mold-drying ovens?
15.	How long should tongs be when they are used to feed material into a hammer?

16. What determines the method used to set a die in a hammer?

17.	What is the first step workers should take before repairing a forging press?
18.	What are the six types of testing most commonly used for forged and cast metals?
	rt Essay (2 points) A safety and health professional and an industrial hygienist are meeting to establish a health program at Baskin Foundry Works. What should the program include?
20.	Steam hammers represent a considerable portion of forging equipment. What are some of the maintenance issues associated with steam hammers?
True	Z 2 (20 POINTS TOTAL) //False (5 points) Howelsoning duties in foundains should be retated so that every other shift has to clean the machine
1.	Housekeeping duties in foundries should be rotated so that every other shift has to clean the machines and equipment. a. true b. false

2.	Slag may be dumped in pits that are humid. a. true b. false
3.	Respiratory protection should be provided for any worker who is going to be repairing the lining of a cupola. a. true b. false
4.	To prevent fires when grinding magnesium, workers should use vegetable oil to cool and lubricate the grinder. a. true b. false
5.	Operators of forging hammers should wear leather gloves because they provide the best protection. a. true b. false
Mult	iple Choice (6 points)
6.	To prevent injuries, reduce compressed air to less than in hoses. a. 20 psig b. 35 psig c. 30 psig d. 35 psig
7.	Which of the following does not apply to crucibles? a. Crucibles should be stored in a warm, dry place. b. The main hazard associated with crucibles is breaking. c. For the first few runs, heat new crucibles very slowly. d. Crucibles should be allowed to cool before they are charged.
8.	When inspecting ovens, what should employees do first? a. Look for the red signal lights on the flame-detecting device. b. Turn off the main valve that controls the fuel supply. c. Check to see if the safety cutoff valves close. d. Make sure the spark plugs are clean.
9.	Hammer dies are usually made of materials such as that are highly resistant to heat, shock, and abrasion. a. chrome b. nickel c. molybdenum stellite d. all of the above

10.	To be properly maintained, a forging upsetter should a. have its air gauges and water lines checked every two days b. be checked for wear and proper adjustment once a month c. have its air clutch and brake inspected on a weekly basis d. be lubricated on a daily basis
11.	Which of the following nondestructive testing methods is useful for revealing cracks, leaks, and similar defects that are open to the surface? a. magnetic particle inspection b. penetrant inspection c. triboelectric method d. radiography
Shor	t Answer (7 points)
12.	What is the two-fold problem created by dust?
13.	Why should floors beneath and immediately surrounding foundry melting units be pitched away from melting units?
14.	An operator who is "botting-up" should not thrust a bott directly into a stream of molten metal Why not?
15.	What are the three ways to install a scale guard?

16.	Sometimes the face of a forging die can be welded to correct a defect. What might this type of repair be hazardous?
17.	What is the single most important factor when it comes to preventing injuries from forging presses?
18.	What materials are used to make magnetic particle inspections?
	The main danger of sand mills is that some operators may reach inside them for samples of sand or attempt to shovel out sand while the mill is running. What are some steps that can be taken to prevent these dangers?
20.	All types of forging hammers present similar hazards. What are the most frequent causes of injury associated with them?