



NEBOSH HSE Certificate in Process Safety Management

Unit PSM1 : sample assessment questions

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Q1. Process safety mainly deals with:	
A.	High frequency, high severity risks
B.	Low frequency, high severity risks
C.	Low frequency, low severity risks
D.	High frequency, low severity risks

Q2. Within a management of change procedure, final approval for removal of a safety critical device should be given by a:	
A.	Senior manager
B.	Lead operator
C.	Chemical engineer
D.	Process technician

Q3. Benchmarking is used to identify good practice across similar:	
A.	Committees
B.	Organisations
C.	Techniques
D.	Procedures

Q4. What is the most important benefit of involving workers when carrying out risk assessments? <i>Select the best answer.</i>	
A.	To reduce resistance and conflict when risk assessments are introduced
B.	To make sure there is a balanced representation of workers and managers
C.	To enable employer and employees to comply fully with legal requirements
D.	To gather detailed practical knowledge about workplace hazards and risks

Q5. Which of the following is the most direct evidence of worker competence?	
A.	Consistently performing a work-related task correctly to the required standard
B.	Signing a document to confirm that a procedure was read and understood
C.	Completing an attendance form following a process safety toolbox talk
D.	Carrying out a work-related task without harming themselves or others

Q6. Process organisations have in place a wide range of mitigation measures designed to reduce the consequences of a major incident. Which risk management technique is especially suited to assess the effectiveness of these mitigation measures?	
A.	Failure Mode Effects Analysis (FMEA)
B.	Event Tree Analysis (ETA)
C.	Risk assessment (RA)
D.	Hazard Identification (HAZID)

Q7. Which of the following is an example of planned preventive maintenance?	
A.	Daily visual inspections of process plant
B.	Greasing of pump bearings
C.	Regular sampling of product
D.	Testing of stack emissions

Q8. Quantitative risk assessment differs from qualitative risk assessment because it is more:	
A.	Adaptive
B.	Objective
C.	Subjective
D.	Detective

Q9. A preferred method of conducting a shift handover is:	
A.	Face to face using verbal and written communication
B.	By telephone using verbal communication
C.	Via a log book using written communication
D.	By radio using verbal communication

Q10. Which of the following is the most important consideration when selecting contractors? <i>Select the best answer.</i>	
A.	Proving that they have no previous or pending enforcement actions
B.	Providing method statements, risk assessments and safety policies
C.	Evidence of previous safe working and understanding their impact on others
D.	Membership of a professional body and adequate insurance cover for the work

Q11. Two separate permits-to-work had been issued for the maintenance work on a pump. One was for repair of the pump and one was for removal and servicing of the pressure relief valve on the discharge side of the pump. The pump repair had been completed but the servicing of the pressure relief valve had not been completed by the end of the shift. In place of the pressure relief valve, a 'blank' had been loosely installed. During shift handover, the maintenance work and return to service of the pump was discussed, but no mention was made of the servicing work being carried out on its pressure relief valve. The pump was then started, allowing flammable liquids to leak from the 'blank'. This vapour cloud ignited, causing a fire. Which of the following actions during shift handover would have been most effective in preventing this accident?	
A.	Verbal communication in a quiet place between incoming and outgoing workers
B.	Confirmation of permits signed off as completed
C.	Discussion of the recorded process checks undertaken by the outgoing workers
D.	A physical demonstration of the plant state between incoming and outgoing workers

Q12. The severity of injury received as a result of contact with electricity is minimised by:	
A.	High current and low body resistance
B.	Low current and high voltage
C.	Low current and high body resistance
D.	High current and high voltage

Q13. What is saturated steam?	
A.	Where all the water has been converted to steam
B.	Where some liquid water is still retained in the steam
C.	Steam under very high pressure
D.	Steam with a temperature in excess of 200°C

Q14. Legionella grow at temperatures between:	
A.	-10°C and -5°C
B.	20°C and 60°C
C.	60°C and 70°C
D.	70°C and 100°C

Q15. One control adopted for safe start-up of plant is:	
A.	Closing of all valves
B.	Closing of drain valves
C.	Opening of all valves
D.	Opening of drain valves

Q16. In terms of safety critical performance standards, what does the abbreviation 'FARSI' stand for?	
A.	Functionality, availability, resource, survivability, interdependency
B.	Functionality, asset integrity, reliability, survivability, interdependency
C.	Functionality, asset integrity, reliability, systemic, interdependency
D.	Functionality, availability, reliability, survivability, interdependency.

Q17. Which of the following best describes a Zone 1 hazardous area?	
A.	A place in which an explosive mixture in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally
B.	A place in which an explosive atmosphere in the form of a cloud of flammable gas in air is likely to occur in normal operation occasionally
C.	A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation, but if it does occur, will persist for a short period only
D.	A place in which an explosive atmosphere in the form of a flammable gas in air is not likely to occur in normal operation, but if it does occur, will persist for a short period only

Q18. An external fire directly heats a vessel containing a flammable liquid. The liquid begins to boil, increasing the pressure which opens an integral pressure relief valve. The liquid level inside the vessel lowers and the fire now begins to heat the vessel above the liquid level. The vessel metal thins, weakens and ruptures. What type of explosion does this describe?	
A.	A confined vapour cloud explosion
B.	A secondary explosion
C.	A boiling liquid expanding vapour explosion
D.	An unconfined vapour cloud explosion

Q19. Development of an emergency plan within a process environment should consider:	
A.	Only the areas within the premises
B.	The premises and adjacent residential neighbourhoods
C.	The premises, neighbouring businesses, and local emergency services
D.	Only the main production area

Q20. Which is the preferred fire extinguishing media in a typical process control room?	
A.	Chemical powder
B.	Foam deluge
C.	Carbon dioxide
D.	Water deluge

Q21. In processes that involve combustible dusts, why is it especially important to maintain good housekeeping?	
A.	Dust can build up on a variety of flat and irregular surfaces which can spontaneously ignite
B.	Dust on surfaces can be disturbed by a primary explosion causing a larger secondary explosion
C.	Dust build up on surfaces can be clearly seen by visitors and gives a poor image of the company
D.	Dust will adversely affect limit sensors and proximity switches causing them to malfunction

Q22. Flammable liquid leaked from a storage vessel into the bund which surrounded it. The liquid began to fill the bund. Liquid also began to leak through cracks in the bund and flow towards a faulty electrical pump usually used to empty the bund of rain water. Within minutes the entire bund was on fire, taking several hours to extinguish. What is the best description of this type of fire?	
A.	Jet fire
B.	Pool fire
C.	Flash fire
D.	Secondary fire