

***** EXAMINATION *****

**SECONDARY EXPLOSION HAZARDS DURING BLASTING
IN OIL SHALE AND SULFIDE ORE MINES**

1. **A solid organic material comprised of hydrogen and carbon**
 - a) molecules is called bitumen
 - b) molecules is called kerosene
 - c) molecules is called benzene
 - d) molecules is called methane

2. **Much of the world's oil deposits can be extracted through**
 - a) surface mining techniques
 - b) underground mining techniques
 - c) auger mining techniques
 - d) hydraulic mining techniques

3. **Bound within the mineral matrix of the oil shale rock is**
 - a) hydrogen
 - b) sulphur
 - c) hydrocarbon
 - d) oxygen

4. **To extract the rich oil shales of Western United States**
 - a) surface mining techniques must be employed
 - b) underground mining techniques must be employed
 - c) auger mining techniques must be employed
 - d) hydraulic mining techniques must be employed

5. **To understand the fire and explosion hazards of oil shale,**
 - a) the location of oil shale must first be examined
 - b) the volume of oil shale deposit must first be examined
 - c) the equipment to extract the deposit must first be examined
 - d) physical and chemical nature of oil shale must be examined

6. **A device having a large storage capacity able to hold data is**
 - a) microprocessor
 - b) central processing unit
 - c) modems
 - d) communication ports

7. **Water and limestone are thermal inhibitors and ammonium**
- a) phosphate may be a metal inhibitor
 - b) phosphate may be a gas inhibitor
 - c) phosphate may be a chemical inhibitor
 - d) phosphate may be a stemming inhibitor
8. **The most effective and economical stemming inhibitors for the**
- a) ignition of a flammable hydrocarbon air mixture is stone
 - b) ignition of a flammable hydrocarbon air mixture is water
 - c) ignition of a flammable hydrocarbon air mixture is oil
 - d) ignition of a flammable hydrocarbon air mixture is fire
9. **Important factors when formulating low incentive explosives**
- a) are the detonation reaction temperature and carbon balance
 - b) are the detonation reaction temperature and fire balance
 - c) are the detonation reaction temperature and oxygen balance
 - d) are the detonation reaction temperature and water balance
10. **A critical factor affecting sulfide dust ignition is**
- a) the sulphur content of the ore
 - b) the tin content of the ore
 - c) the titanium content of the ore
 - d) the vanadium content of the ore
11. **A test show that sulphide ore with high pyrite content could**
- a) propagate slow explosion to distances up to 66 meters
 - b) propagate slow explosion to distances up to 76 meters
 - c) propagate slow explosion to distances up to 86 meters
 - d) propagate slow explosion to distances up to 96 meters
12. **A frequently employed mining method used in steeply dipping**
- a) sections is the drift and fill with back stoping
 - b) sections is the drift and fill
 - c) sections is the room-and-pillar with backfill
 - d) All of the above
13. **In the bituminous coal mining, limestone rock dust is added**
- a) to the deposited float coal dust to make it nonexplosible
 - b) to the deposited float coal dust to make it explosible
 - c) to the deposited hydrocarbon to make it nonexplosible
 - d) to the deposited hydrocarbon to make it explosible
14. **The sulfide ore mines are also called**
- a) ocean metal mines
 - b) strip mines
 - c) naval mines
 - d) base metal mines

15. **A microprocessor controls the**
- a) blast analyzer and its associated functions
 - b) gas analyzer and its associated functions
 - c) inhibitor and its associated functions
 - d) fire-resistant-tube and its associated functions
16. **The amounts of hydrocarbon release in blasting operations**
- a) are compared with the sulfur measured in core samples
 - b) are compared with the oxygen measured in core samples
 - c) are compared with the hydrocarbon measured in core samples
 - d) are compared with the pyrite measured in core samples
17. **A means of further reducing the concentration**
- a) of dust clouds during blasting sequence is the igniting
 - b) of dust clouds during blasting sequence is the dumping
 - c) of dust clouds during blasting sequence is the stemming
 - d) All of the above
18. **The higher the negative oxygen balance, the more excess hot**
- a) hydrogen and carbon monoxide discharge from the borehole
 - b) oxygen and carbon dioxide discharge from the borehole
 - c) hydrocarbon and sulfur dioxide discharge from the borehole
 - d) nitrogen and nitrogen dioxide discharge from the borehole
19. **The extent of the explosion is detected by**
- a) chalcopyrite
 - b) magnetite
 - c) sphalerite
 - d) pyrrhotite
20. **A mineral composed of sulfide ores that usually cannot be**
- a) recovered is sphalerite
 - b) recovered is pyrite
 - c) recovered is galena
 - d) recovered is iron

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