



**UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA**

**FIRST SEMESTER EXAMINATIONS, NOV/DEC 2018**

**COURSE NO:** GL 223

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**COURSE NAME:** RIG MAINTENANCE

**CLASS:** GD II

**TIME:** 2 HOURS

Name: \_\_\_\_\_ Index Number: \_\_\_\_\_

**SECTION A**

*Answer only a question*

1. Discuss Predictive Maintenance. **18 marks**
2. Discuss the importance of additives in lubricants. **18 marks**

**SECTION B**

*Answer all questions, each question carries one (1) mark.*

1. Wagner WF 100 load cell type weight indicators is BEST installed using
  - A. Hand pump #WH 104
  - B. Hand pump #WH 101
  - C. Hand pump #WH 103
  - D. Hand pump #WH 102
2. Which synthetic is BEST used in piston compressors?
  - A. Mobil SHC 626
  - B. Mobil Rarus 827 SHC
  - C. Mobil SHC 630
  - D. Mobil Jet Oil II
3. All the following are straight weights for chain oil EXCEPT
  - A. SAE 20
  - B. SAE 50
  - C. SAE 40
  - D. SAE 85
4. The following synthetics lubricants have their applications indicated;
  - i. Mobil SHC 626: Hub city gear boxes, Gear PTO's and hyd. Systems
  - ii. Mobil SHC 630: High speed topdrives, chain boxes, gear boxes

State where Mobil Jet Oil II can be applied?

5. .... is used for funk transmissions, Allison convertors/transmission.
6. In pneumatic control air systems, ..... is used during winter whiles ..... is used during summer for air clutch controls, air throttle systems, and fluid couplings on engines.
7. In maintaining all engines, truck, deckmounted, gen sets, pump units, ..... oil is used to lube wirelines.
8. .... is applied on drillpipe threads on water wells.

9. .... are not used in boxes with brass parts during gear oil : SAE 85/140

10. During DTHH lubrication, rock drill oil or other petroleum products can be used whereas vegetable based oil such as MATEX RDO 302 cannot be used.

True / False

11. In hydrostatic systems, Conoco super hydraulic MV 32 medium and low pressure hydraulic systems is used.

False / True

12. Hydraulic systems and hydrostatic systems can be used with Conoco super hydraulic 46 high pressure hydraulic for topdrives, rotaries, etc and Conoco super hydraulic MV 32 medium and low pressure hydraulic systems in that order.

True / False

### SECTION C

*Answer two questions; question one and any other.*

Q1. Explain how to ensure that the drilling rig lasts longer? [10 marks]

Q2. State the function of the fuel and water separator on the drilling rig and briefly explain the consequences of the water separator blocks to the drilling rig. [20 marks]

Q2. Explain in details the Integrated Compressor on the drilling machine and state two of its functions. [20 marks]

*Examiner: Assoc. Prof A. Simons*