

Misurata University

Faculty of Engineering, Dept. of Petroleum Engineering

Petroleum Geology and Exploration course – Final Exam

Date: Thursday, 2/02/2023	Time 120 minutes
رقم القيد:	إسم الطالب:

Q1. Choose the best answer from the provided alternatives:

- 1. The resultant products of the early petroleum refineries in Scotland in 1847 included:**(a) ammonia(b) solid paraffin wax (c) liquid paraffin (kerosene or coal oil). (d) all are correct
- 2. By the 1920s the oil industry was dominated by seven major companies, termed the "seven sisters", which include:** (a) British Petroleum, Shell, Exxon, Agip, Texaco, Mobil and Socal (b) British Petroleum, Total, Exxon, Gulf, Texaco, Mobil and Socal (c) *British Petroleum, Shell, Exxon, Gulf, Texaco, Mobil and Socal* (d) Sun Oil, Shell, Exxon, Gulf, Texaco, Mobil and Socal
- 3. Anoxic conditions prevail in Lakes or semi-enclosed marine basins, because of:** (a) they often have a temperature- or salinity-induced density stratification (b) the water in the lakes overturns in the winter (c) oxygenated surface water does not mix with water in the deeper part of the basin (d) both a and c
- 4. The right order of the top four countries in approved petroleum reserve is** (a) Saudi Arabia, Venezuela, Iran and Canada (b) Saudi Arabia, Venezuela, Canada and Iran (c) Saudi Arabia, Canada, Venezuela and Iran (d) Saudi Arabia, Iran, Venezuela and Canada
- 5. The most important of the phytoplankton which provide organic matter for petroleum are:**(a)Radiolaria (b) Foraminifera (c) diatoms (d)Pteropods
- 6. Statoil is the State Oil Company (National Oil Company) in** (a) Canada (b) UK (c) USA (d)Norway
- 7. Petronas is the State Oil Company (National Oil Company) in** (a) Malaysia (b) Indonesia (c) Canada (d) Venezuela.
- 8. Which of the following processes contributes to the formation of source rocks?**(a) Bioturbation(b) oxidation (c) anaerobic disintegration (d) aerobic disintegration

The best source rocks result when:(a) an intermediate sedimentation rate in relation to organic production occurs(b) a rapid sedimentation rate occurs (c) a slow sedimentation rate in non-stagnant water occurs (d) all are incorrect.

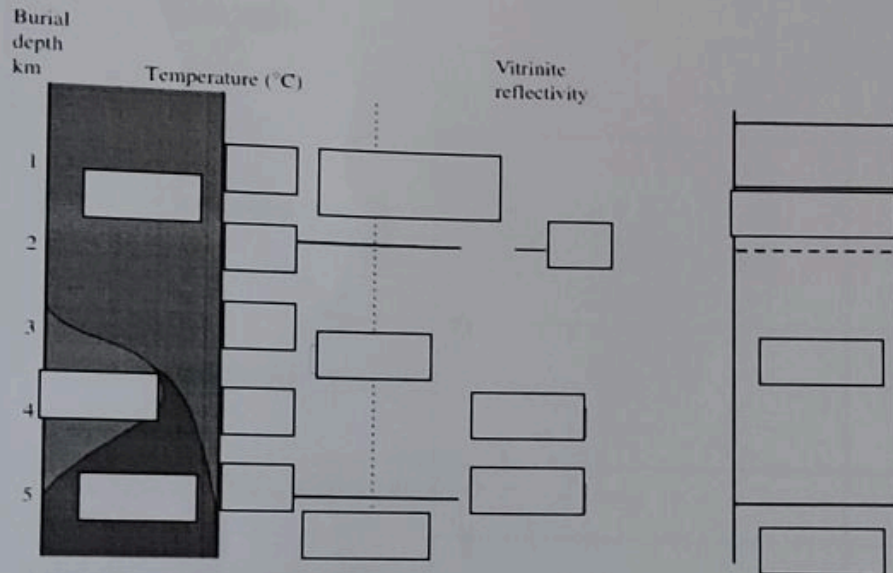
10. Creekology is (a) an old method of refining oil (b) an old method of locating oil wells(c) an old method of drilling oil wells (d) all are correct.

Q2. State whether the following statements are True (T) or False (F). If the statement is false; write down the correct one.

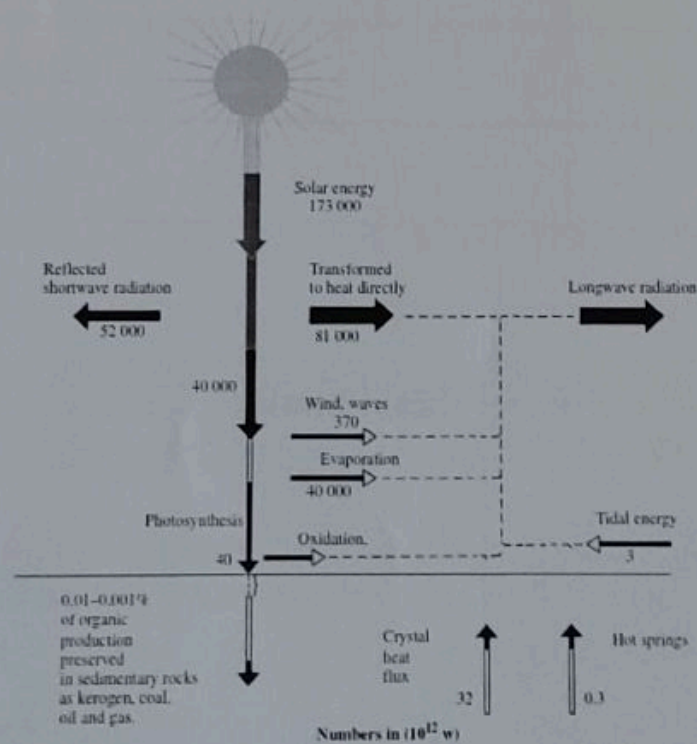
1. Libya became a consistent producer of petroleum. The total oil reserve of Libya is around 2 per cent of global reserve.
2. Throughout the first millennium A.D. Oil and asphalt were gathered from shallow wells in many parts of the world.
3. Geophysics, as its name indicates, has to do with *Geology* of the *Earth* and its surrounding atmosphere.
4. Inorganic methane from the interior of the earth doesn't form major gas accumulations in the earth's crust.
5. Saffaniyah field in the Arabic Gulf is the largest offshore oil field in the world.
6. The physical properties of salt domes are a relatively low density, a negative magnetic susceptibility, a low electrical resistivity and a low seismic wave velocity.
7. Large animals such as dinosaurs are totally irrelevant as sources of oil.
8. Aerobic breakdown is much more effective in fine-grained sediments than in coarse-grained ones.
9. At each step in the food chain, which we call a trophic level, the amount of organic matter (the biomass) is reduced to 15%.

the Black Sea the rate of accumulation of organic matter exceeds the rate of oxygen supply.

Q3. In the provided figure write down the missing words and numbers?



Q4. Comment on the following figure?



5. Write the measured parameter and the operative physical property for each geophysical exploration method?

Method	Measured parameter	Operative physical property
Seismic		
Gravity		
Magnetic		
Electrical Resistivity		
Induced polarization		
Self-potential		
Electromagnetic		
Radar		

5 x 12 = 60pts

Good luck!