

Round: 9A

1. The Deepwater Horizon oil spill in the Gulf of Mexico was the largest accidental marine oil spill in the history of the petroleum industry. If the discharge rate was $8,400 \text{ m}^3$ per day, how much oil was discharged between April 20 and July 15 (before the well was capped)? (3 pts)
2. The Gulf of Mexico has sedimentary sequences of sandstone, mudstone, and salt layers (evaporites). (6 pts)
 - a) When these rocks were originally deposited, which contained the most organic matter?
 - b) When these rocks were originally deposited, which trapped the oil in place?
3. Which rock, from Question 2, is most likely to contain oil today? Does this rock have high or low porosity? High or low permeability? (5 pts)
4. What two (2) past conditions made the Gulf of Mexico favorable for each of the following: (4 pts)
 - a) development of salt layers?
 - b) development of oil?
5. What two (2) conditions are needed to transform organic matter into oil? (2 pts)