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# GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fourth Semester – Regular) Examinations, June – 2021  
**BPCPR4050– PETROLEUM EXPLORATION AND EXPLOITATION**  
 (Petrochemical and Petroleum Refinery Engineering)

Time: 2 hrs

Maximum: 50 Marks

## Answer ALL Questions

The figures in the right-hand margin indicate marks.

### PART – A: (Multiple Choice Questions)

(1 x 10 = 10 Marks)

#### Q.1. Answer **ALL** questions

[CO#] [PO#]

- |  |     |     |
|--|-----|-----|
| a. Which of the following rock favours petroleum formation?                        | CO1 | PO1 |
| (i) Sedimentary rock   |     |     |
| (ii) Metamorphic rock  |     |     |
| (iii) Igneous rock   |     |     |
| (iv) none of the above   |     |     |
| b. A source rock   | CO2 | PO1 |
| (i) Reflects high productivity   |     |     |
| (ii) Is igneous  |     |     |
| (iii) Is usually sandstone with impermeable layers above and below                 |     |     |
| (iv) Is created by plate tectonics   |     |     |
| c. The general exploration gives information about which of the following features | CO2 | PO1 |
| (i) Depth of rock  |     |     |
| (ii) Ground water level  |     |     |
| (iii) Composition of soil strata   |     |     |
| (iv) All of the mentioned  |     |     |
| d. Which of the following method measures spatial variation in the earth?          | CO2 | PO2 |
| (i) Seismic reflection survey  |     |     |
| (ii) Magnetic survey   |     |     |
| (iii) Gravity survey   |     |     |
| (iv) None of the above   |     |     |
| e. Trap formed by the movement of rock along a fault rock is known as              | CO2 | PO1 |
| (i) Fault trap   |     |     |
| (ii) Structural trap   |     |     |
| (iii) Stratigraphic trap   |     |     |
| (iv) None of the above   |     |     |
| f. Which of the following does not fall under the category of wireline logs?       | CO1 | PO3 |
| (i) Electrical log   |     |     |
| (ii) Acoustic log  |     |     |
| (iii) Radioactive  |     |     |
| (iv) Production logs   |     |     |
| g. What type of log do we use for porosity calculation                             | CO3 | PO3 |
| (i) Density / Neutron  |     |     |
| (ii) Resistivity   |     |     |
| (iii) Gamma ray  |     |     |
| (iv) SP log  |     |     |
| h. The topmost casing is   | CO1 | PO1 |
| (i) Surface casing   |     |     |
| (ii) Production casing   |     |     |
| (iii) Intermediate casing  |     |     |
| (iv) Conductor casing  |     |     |
| i. The advantage of air and mist drilling fluid include                            | CO4 | PO1 |
| (i) Higher penetration rates   |     |     |
| (ii) No lost circulation problems  |     |     |
| (iii) Longer bit life  |     |     |
| (iv) All of the above  |     |     |
| j. What is done with the drilling mud prior to cementing the casing?               | CO1 | PO1 |

- (i)Conditioning  
(iii)Both (i) and (ii)
- (ii)Perforating  
(iv)None of the above

**PART – B: (Short Answer Questions)**

**(2 x 5 = 10 Marks)**

Q.2. Answer **ALL** questions

	[CO#]	[PO#]
a. Define reservoir rock.	CO2	PO1
b. What do you mean by dim spot?	CO1	PO1
c. List out the various porosity log.	CO3	PO3
d. What is the principle of neutron logs?	CO3	PO3
e. What is seismic technology?	CO2	PO2

**PART – C: (Long Answer Questions)**

**(6 x 5 = 30 Marks)**

Answer **ANY FIVE** questions

	Marks	[CO#]	[PO#]
3. Discuss briefly about the important factors that control the occurrence of petroleum reserves.	(6)	CO2	PO1
4. What are the different phases of migration and accumulation of petroleum from source to reservoir rock?	(6)	CO2	PO1
5. How is a Geotechnical order for an exploratory well made and the data required for making the geotechnical order?	(6)	CO2	PO2
6. Discuss in briefly the different geo chemical methods of prospecting of petroleum.	(6)	CO3	PO1
7. Discuss briefly about anticline trap and fault trap.	(6)	CO2	PO1
8. Explain shortly on natural gamma ray logging.	(6)	CO1	PO3
9. What are drilling fluids? Discuss shortly about the composition and significance of drilling fluids.	(6)	CO1	PO1
10. Describe the various components of jackup rig and explain its operation.	(6)	CO1	PO1

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