

Name:

Enrolment No:



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2018

Programme Name: B.Tech GSE

Semester : III

Course Name : Ground Water Exploration

Time : 03 Hrs

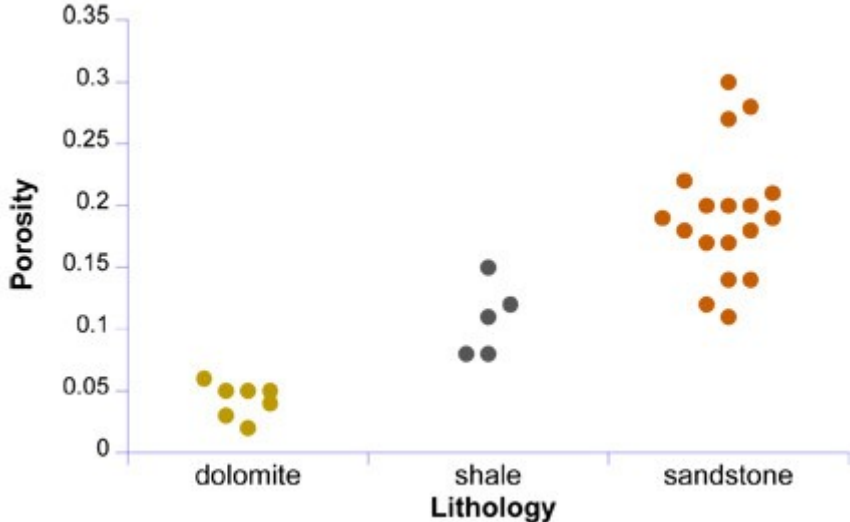
Course Code : PEGS 2008

Max. Marks : 100

Nos. of page(s) : 2

Instructions: All questions are compulsory. However, there is internal choice in some question.

### SECTION A

S. No.		Marks	CO
Q 1	What are the various groundwater laws and regulations being applied for the proper utilization of groundwater resource in India?	7.5	CO1
Q 2	Draw a suitable diagram-showing zone of aeration, zone of saturation and perched water table (PWT). How PWT is different from water table?	7.5	CO1
Q 3	Examine the prospects of groundwater in different rock types from given figure 	7.5	CO2
Q 4	What are the limitations of resistivity method in groundwater prospecting for high resistive zone? Briefly explain the alternative method of geophysical investigation in high resistivity zone.	7.5	CO2
<b>SECTION B</b>			
Q 5	Critically explain the relative groundwater prospects in various geological formations of India.	15	CO3

Q 6	Give a conceptual model with suitable diagram for understanding the threat of aquifer contamination due to waste disposal on the ground surface.	15	CO3
Q 7	Analyze the various numerical models namely, finite difference method (FDM) and finite element method (FEM) for the quantitative assessment of groundwater resource. How these models are useful in sustainable development of groundwater resource?  <b>OR</b> Identify the challenges and remedial process in maintaining the quality of groundwater in coastal region due to overexploitation, and develop a relationship between seawater and freshwater interaction.	15	CO4
<b>SECTION-C</b>			
Q 8	Evaluate the merits/demerits of Wenner, Schlumberger and dipole-dipole arrangement for resistivity survey in groundwater exploration. Delineate the various layer thickness and resistivity from the resistivity data collected through Schlumberger survey.  <b>OR</b> Explain in details the groundwater quality parameters for drinking purpose. Give a groundwater model for quality assessment with representative map showing desirable, permissible and non-permissible classes	25	CO5