UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Programme Name: B.Tech APE UP — Semester: VII

Course Name : Coal Bed Methane Technology — Time : 03 hrs.

Course Code : PTEG 426 — Max. Marks : 100

Nos of page(s) :01

Instructions : All questions are Compulsory.

SECTION A

S.No.		Marks	CO
Q 1	What is composition of Coal Bed Methane.? How it is different from conventional gas?	4	CO1
Q 2	What are the main properties which are affecting the adsorption capacity of coal?	4	CO2
Q 3	Direct method for in-situ gas content in coal	4	CO3
Q 4	Mechanism for gas flow in the coal seams	4	CO4
Q 5	Why coal is a suitable candidate for methane storage?	4	CO2
	SECTION B		
Q 6	Write short notes on any two: a) Estimation of SCF per ton of CBM b) Relation between mean maximum reflectance of vitrinite and volatile matter c) Proximate Analysis of Coal	4+4	CO3
Q 7	Explain Langmuir isotherm with proper figure. What is the Relation between mean maximum reflectance of vitrinite and Langmuir Pressure and Langmuir volume and Ash content	8	CO3
Q 8	Describe in detail the volumetric method of Coal bed Methane Reserve Estimation. How the recovery factor is determined?	8	CO3 CO4
Q 9	a) Schematic of a Vertical Cased Hole Multi-Seam Completion b) What are the factors to be considered for hydrofracturing in coal	4+4	CO4
Q 10	What are the assessment tools for CBM exploration and exploitation in a basin? **OR** Basic cost and economic model of a CBM project	8	CO5
	SECTION C		
Q 11	Drilling Technology of a CBM well. Advantage and disadvantages of various completion techniques. **OR** Why coal seams need fracturing. What are the unique problems in fracturing coals? Draw a graphical representation of CBM fracturing	20	CO4
Q 12	a) Describe the status of exploration and exploitation of CBM in India. b) Current scenario of CBM production and future of CBM in India.	10+10	CO5