

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Programme Name: B.Tech (GIE)

Semester : VII

Course Name : Geophysical Data Acquisition, Processing and Interpretation

Time : 03 hrs

Course Code : GSEG 402

Max. Marks: 100

Nos. of page(s) : 2

Instructions: Answer each question in separate page.

SECTION-A (5x4=20)

Sl. No.		Marks	CO
Q1	Describe the working principal of moving coil geophone for data acquisition in gravity geophysical survey.	5	CO1
Q2	Write a short note on seismic data recording systems.	5	CO2
Q3	Describe different configurations of 3D seismic survey for seismic data acquisition.	5	CO2
Q4	For migration of seismic data for a dipping layer, why common midpoint assumption do not hold good and how it is overcome in seismic signal processing?	5	CO6

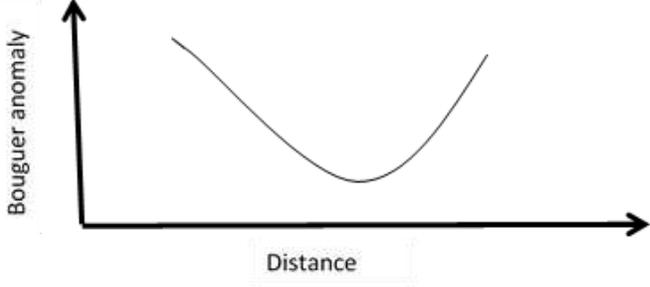
SECTION-B (10x4=40)

Answer question 5 and any three from rest of the following.

Q5	What is static correction in seismic signal processing?	10	CO6
Q6	What is synthetic seismogram and what is its importance in seismic survey?	10	CO1
Q7	How you will estimate velocity of refracted and reflected ray in a seismic survey?	10	CO6
Q8	Write a comprehensive essay on seismic stratigraphy.	10	CO5
Q9	Describe the process of deconvolution in seismic signal processing.	10	CO5

SECTION-C (20x2=40)

Answer question 10 and any one from rest of the following.

Q10	<p>What is seismic tomography? What is its advantage on conventional seismic survey?</p> <p>For a given gravity survey you are getting following Bouguer anomaly pattern along survey line. What you can infer about subsurface structure?</p>  <p>The graph shows a coordinate system with a vertical y-axis labeled 'Bouguer anomaly' and a horizontal x-axis labeled 'Distance'. A smooth, downward-opening parabolic curve is plotted, starting at a positive value on the y-axis, reaching a minimum, and then rising again. This shape is characteristic of a subsurface density deficit, such as a basin or a low-density layer.</p>	5+5+ 10=20	CO3, CO2
Q11	Write a comprehensive essay on Temporal variation of magnetic observations for magnetic geophysical data acquisition processing and interpretation.	20	CO4
Q12	What are the governing equations and Assumptions of Magnetotelluric geophysical investigation?	20	CO3