

Name:
Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
END Semester Examination December 2020**

Program: B-Tech GSE
Course: Methods in Structural Geology
Course Code: PEGS-4003P
Number of pages:03
Note: online submission

Semester: VII
Time: 180 minute (3 hour)
Max. Marks: 100

SECTION A

- 1. Each questions carry 5 Marks 6 X 5 = 30 M**
2. Type answer for all the questions in the answer sheet using given space.
3. The maximum word limit is 30 or 3 lines (only question number 1, 2 & 3) and type single word answer for question number 4, 5 and 6).

Q.No	Question				COs
1	Define the following terms in context with Structural geology; a) Geometry & b) out crop				CO1
2.	Distinguish between the following terms: i) Antithetic and Synthetic faults and ii) Klippen and Nappen				CO2
3	Write a brief note on following terms in context with structural geology. a) Strike and b) Dip				CO3
4	Fill in the blanks with suitable answer: i. Schuppen structure are associated with..... ii. An unconformity which marks an abrupt change in the velocity of seismic wave is iii.joints formed perpendicular to column axes due to contraction. iv. The Tear faults are a variety of faults. v. In brittle faulting occurs at 30° to the greatest Stress.				CO4
5	MCQ (Choose correct answer and type the answer)	A) answer	B) answer	C) answer	CO5
	a)The claiming ripple are formed or characteristic of..... structure	Point bar	Bedding	Both A & B	
	b) The submarine volcanoes that may form series of chains is called as.....	Seamount	ARC	Island	
	c) The modified Mercalli scale is used to measure of due to earthquake	Intensity	Damage	Stress	
	d) The structures occurs as an isolated feature in the earth surface is called.....	Penetrative	Monoclinial	Discrete	
	e) layer is the semi rigid part of the middle mantle that flows like hot asphalt	Hydrosphere	Lithosphere	Asthenosphere	

6	TRUE/False (Choose correct answer and type the answer)	A) True	B) False	CO6
	i) The Grand Canyon topography is a type of Cliff and benches	A) True	B) False	
	ii) The plastic deformation does not causes earthquakes	A) True	B) False	
	iii) The Aa blocky rough lava with low viscosity	A) True	B) False	
	iv) The closely spaced parting is called as fissility	A) True	B) False	
	v) The earthquake top along the descending plate known as Benioff zone	A) True	B) False	

SECTION B

1. Each questions carry 10 Marks
2. Scan and upload your answer
3. The maximum word limit is 500 or one page

5 X 10 = 50 M

Q.No	Question	COs
7	Define Joints and discuss in brief classification of joints in context with geotechnical engineering	CO2
8.	Describe in brief the role and significance of following terms in fold classification. a) Plunge b) Inflection point c) Vergence d) Enveloping surface e) hinge	CO3
9	Explain in brief the significance of following terms in structural analysis: i) Principle stress, ii) Tensile stress, iii) Shear stress, iv) compressive stress OR Explain in brief the classification of fold using plunge and dip isogon methods.	CO4
10	Write a short note on following terms and their importance in fault analysis. a) Growth fault b) fault scarp or gouge c) Asperities d) en- echelon fault	CO5
11	Define fracture and discuss in brief the classification of fractures.	CO1

SECTION B

1. The question number 12 answer either a, b, c OR D
2. Scan and upload your answer
3. The maximum word limit is 500 or one page

1 X 20 = 20 M

Q.No	Question	COs
12	<p>a) Strike and true dip of the outcrop is N 65° E, 35°SE. Determine the apparent dip in Vertical section trending S 50° E by both numerical and Graphical method. 5 M</p> <p>b) The apparent dips were record in a sandstone outcrop 1:5 due S20 E and 1:10 due N50E Find the direction and amount of true dip amount. 5 M</p> <p>c) Three boreholes are sunk at SW, SE, & NW corner of square level ground; the each side of corner is 800 mts long. The boreholes are A, B & C respectively. The bore hole at 200mts, Y at 300mts and Z at 400 mts meet the coal seam respectively. Determine the attitude of the coal seams and fourth borehole P is proposed at NE corner of the square level ground, determine at what depth the borehole P is encounters the coal seam. 10 M</p> <p style="text-align: center;">OR</p> <p>d) Justify in brief why this terms data are very important in structural analysis.</p> <p>i) Grain size, shape and arrangement ii) time iii) pressure -temperature iv) deformation v) fluid activities 20 M</p>	CO6