

Name:	 UPES <small>UNIVERSITY WITH A PURPOSE</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
END Semester Examination, DECEMBER 2019

Program: B-Tech GSE	Semester: VII
Course: Methods in Structural Geology	Time 03 hrs.
Course Code: GSEG-401	Max. Marks: 100

Instructions: All the questions of section A & B are compulsory. Q.7 is compulsory, in Q.8 attempt a b. c, d OR e questions from section. C. Wherever necessary do with neat sketches.

Number of Pages:03

SECTION A

S. No.		Marks	CO
Q 1	Write a note for the following terms: a) Antidune b) Glomeroporphyritic c) Tenacity d) <u>Syneresis</u> e) Lineation	10	CO1
Q.2	Differentiate between the following terms: iv) Flute cast and Load cast v) Sill and Dyke vi) Klippen and Nappen vii) Ball and Pillow structure viii) Lenticular and Flaser bedding	10	CO2

SECTION B

Q.3	Fill in the blanks with suitable answer: i. joints are joints that form immediately adjacent to and parallel to the shear face of a fault ii.joints occur when the joints intersect each other at angles significantly less than ninety degrees. iii. Salt domes are the best examples of fold iv. The plunge and pitch are equal when the beds are indirection. v. Folds are formed within the incompetent beds are overlain by competent beds.	10	CO4
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	<ul style="list-style-type: none"> vi. When the axis plunges directly down the dip of the axial plane; the fold is known as,,,,,,,,,,,,, vii. Thrust faults form And..... in the large thrust belts viii. The direction and magnitude of heave and throw can be measured only by finding common intersection points on either side of the fault called a.....points ix. Low-angle normal faults with regional tectonic significance may be designate faults x. The..... angle between the fault plane and a vertical plane that strikes parallel to the fault. 		
Q.4	Discuss in brief types of stress-strain analysis and their significance in structural analysis.	10	CO5
Q.5	Explain in brief the significance of following terms in structural analysis: i) Cross strike joints ii) Tectonic fracture iii) Rollover anticline iv) Conjugate fault	10	CO3
Q.6	Describe in brief with neat sketch and their role in structural geology: a) Supratenuous fold b) Coulomb fracture faulting c) Plunging upright and reclined fold d) Fault propagated fold	10	CO4
SECTION-C			
Q.7	Write a short note on following terms and their significance with neat sketch: i) Growth fault ii) Disharmonic fold iii) Passive flow fold iv) Shear fractures v) Plumose structure.	6+7+7	CO3 CO6 CO5
Q.8	<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.</p> <p>b) Find the line of intersection of plane N30 E 55NW and N35W 65SW using stereographic net.</p> <p>c) Plot the lineation's is aligned with the following plunge and azimuth directions i) 35 and 210, ii) 40 and 150 iii) 50 and 310 and iv) 35 and 80 (using Stereographic net)</p> <p>d) Draw a suitable cross section and plot a profile section for given outcrop map. Estimate the dip and strike for each beds in the outcrop map. Identify what are major geological structure are in the outcrop map. Scale 1cm=100m</p> <p style="text-align: center;">OR</p> <p>e) Explain in briefly the following terms role and significance in structural analysis.</p>	<p>OR</p> <p>4+4 +4+8</p>	CO4 CO3 CO6

i) Buckling and Flexural slip in fold ii) Listric and Antithetic faults iii) Ptygmatic and Parasitic folds iv) Mural and Cooling joints v) Fracture trace and Fracture front

