UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination June 2021

Program: B. Sc.,   Semester: II
Course: Structural Geology   Time: 180 minute (3 hour)
Course Code: PEGS-1006   Max. Marks: 100 marks
Number of pages:03
Note: online submission

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) Pinnate fracture & b) Plumose structure.	CO1
2.	Distinguish between the following terms: i) Brittle and brittle –ductile shear zone & ii) Listric fault and Growth fault. .	CO2
3	Write a brief note on importance of term Slip and Separation in fault analysis.	CO3
4	Fill in the blanks with suitable answer: i. The ……….vertical fault is associated with a low angle over thrust fault and occurring in hanging wall with displacement may be horizontal. ii. The …………. Shear is an example of hyperelastic or irrotational strain. iii. The oblique normal fault and detachment faults in rift zones are typical structural examples of ………………. Regimes. iv. The …….. Lines are perpendicular to the direction of propagation and parallel to the advancing edge of fractures. v. The……………… surface is smooth striated and polished surface due to frictional movement between the two sides of a fault.	CO4

5	MCQ (Choose correct answer and type the answer)	A) answer	B) answer	C) answer	CO5
	a) The ………….. is the direction of leaning of the axial surface in a fold.	Hinge	Vergence	limb	
	b) The …………folds are showing step like two horizontal limbs connected by a shorter inclined limbs.	Drag	Box	Monoclines	
	c) The ……….folds have fold axis plunging down the dip of the axial surface.	Syncline	Recumbent	Reclined	

	d) The …………. is short interruption in the sedimentation with little or no erosion.	Hiatus	Diastem	Both A & B	
	e) The -----------Joints are formed in a three dimensional joint sets and perpendicular to each other and separate or break the rock into cubical blocks.	Prismatic	Columnar	Mura;	

6	TRUE/False (Choose correct answer and type the answer)	A) True	B) False	CO6
	i) The Mylonite rocks are good examples of ductile shear zone	A) True	B) False	
	ii) The Stick slip is unstable frictional sliding due to downward movement fold.	A) True	B) False	
	iii) The Himalayan mountains are good examples for constructive building mountains.	A) True	B) False	
	iv) Strain is proportional to stress in elastic deformation	A) True	B) False	
	v) The nappes structures may formed low angle fault associated with fold.	A) True	B) False	

SECTION B

1. **Each questions carry 10 Marks**   **5 X 10 = 50 M**
2. **Scan and upload your answer**
3. **The maximum word limit is 500 or one page**

Q.No	Question	COs
7	Define fracture and discuss in brief the criteria and classification of fractures.	CO1
8.	Write a short note on role and significance of following terms in fold analysis. i) Decollement ii) Kink iii) Flexural slip iv) Drag v) plunge	CO2
9	Describe in brief with neat sketch of following terms and their importance in structural geology. a) Compressional fault b) Tensional fault and c) Shear faults	CO3
10	Explain in brief the classification of stress-strain and their application in structural analysis. OR	CO4

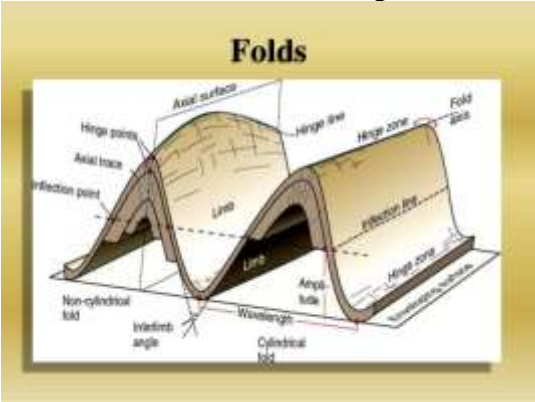|		
	In the sandstone outcrop the strike and true dip of the bed is N **65° E, 40°SE.** Determine the apparent dip in Vertical section trending **S 70° E** by both numerical and Graphical method. **4 M** The apparent dips were record in a sandstone outcrop is as follows a) **220°, 25°SW** and **160°, 25° SE.** Find the direction and amount of true dip amount. **6 M**	
11	Define unconformity and describe in brief the classification and significance of unconformity.	CO5

SECTION C

1. **The question number 12 answer either a, OR b**   **1 X 20 = 20 M**
2. **Scan and upload your answer**

The maximum word limit is 750 or two page

12	a) Give justification in brief, about how essential the given terms are in the diagram in context with fold analysis. OR b) Write a short note on following terms in context with Joint classification; i) Joint set ii) Joint spacing iii) Joint condition iv) joint number v) joint systems vi) Joint genesis	CO6