

M. SC. APPLIED GEOLOGY EXAMINATION, 2022

(2nd Year, 1st Semester)

ENVIRONMENTAL GEOLOGY

PAPER – DSE/TH/01A

Time : Two hours

Full Marks : 40

(Use a separate Answer script for each Part)

PART – I (20 Marks)

Answer any four (04) questions from the following:

(4×5 = 20)

1. Discuss the importance of 'slope facet' on estimation of TEHD ratings for LHZ mapping? What is relative-relief? Why most the cases of landslide disasters, earth quake & cloud burst act as 'triggering factors'? (2+1+2)
2. How does 'rock slide' differ from 'rock toppling'? Present a classification flow chart of mass wasting processes based on water content and velocity. (2+3)
3. What is liquefaction of soil? How does it differ from super saturation condition? For a fine grained fluvial sediment it is estimated that its natural water content is 20%, liquid limit 42% and plastic limit 28%. Calculate the liquidity index of the sediment sample. (2+1+2)
4. How does the Earth's eccentricity differ from its obliquity. Which Milankovitch cycles are responsible for the \therefore . (2+3)
5. Distinguish in between (any two) (2×2.5)
 - a. Creep and Gelifluction
 - b. Water content and Degree of saturation
 - c. Plastic and Shrinkage limit of natural clay

[Turn over

PART – II (20 Marks)

Answer question *1* and any *two* from the rest

1. Write notes on (2 x 2 = 4) :

- (a) Environmental impacts of mining
- (b) Rain forest

2. Is the Ozone hole causing climate change? What is a carbon footprint, and how can we reduce the carbon footprint? What are the causes of soil erosion? What are the causes and effects of deforestation?

2+ 2+ 2+2 =8

3. How do you classify waste on the basis of origin and type? What do you mean by composting and incineration? What do you mean by the term 'Solid waste'? Which steps would be taken for disposal of solid waste?

2+ 2+ 2+2 =8

4. What can we do to reduce deforestation? What do you understand by the terms 'Rain splash' and 'Sheet wash'? What is eutrophication? What environmental damage is caused by mercury pollution, and what are the main sources of mercury pollution?

2+2+2+2=8