

MA/M.Sc. GEOGRAPHY
FIRST SEMESTER
FUNDAMENTALS OF GEOMORPHOLOGY
MGE-101

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A : Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1x20=20

1. What is base level of erosion?
 - a. The level upto which erosion can occur.
 - b. It is reference level for altitude.
 - c. A levelled surface.
 - d. All of the options in (a), (b) and (c).

2. Who has used the term geomorphology for the first time?
 - a. McGee
 - b. Laumann
 - c. Powell
 - d. Keith

3. What is the age of the earth?
 - a. 4.5 thousand years
 - b. 450 million years
 - c. 4.5 billion years
 - d. 45,000,000 years

4. Who discovered the hydrological cycle?
 - a. W. M. Davis
 - b. James Hutton
 - c. Pierre Perrault
 - d. Bernard Palissy

5. Who wrote a book titled 'Principle of Geology' on the basis of Huttonian principle of uniformitarianism for the first time?
 - a. James Hutton
 - b. John Playfair
 - c. Charles Lyell
 - d. Charles Darwin

6. Which one of the following is not correct?
 - a. Graben refers to downward-faulted blocks.
 - b. The term horst is applied to upward faulted block.
 - c. A normal fault is a tensional fault.
 - d. A normal fault is also known as strike slip fault.

7. The type of plate-boundary interaction along the Himalayas is known as:
 - a. Continent-continent convergence
 - b. Divergent boundary
 - c. Transform boundary
 - d. Ocean-continent convergence

8. Which of the following earthquake waves is first recorded on the seismography?
 - a. P-waves
 - b. Rayleigh waves
 - c. S-waves
 - d. Long-waves

9. What is a plunging fold?
 - a. Fold with fold axis horizontal
 - b. Fold with fold axis only vertical
 - c. Fold with fold axis not horizontal
 - d. This is not a type of fold

10. Who is known as the Father of Plate Tectonics?
 a. Harry Hess
 c. Alfred Wegener
 b. Mr. Mariglia
 d. Albert Einstein
11. Movement of crustal plates result in formation of:
 a. A huge island
 c. A small island
 b. Small volcanic islands
 d. Huge volcanic islands
12. Which of the following process is responsible for weathering of rocks in the Karst region?
 a. Carbonation
 c. Oxidation
 b. Scree formation
 d. Hydrolysis
13. Which one of these glacial features is believed to have formed in the bed of a sub-glacial stream?
 a. An Esker
 c. Drumlin
 b. A Moraine
 d. Kame
14. Which one of the following features is formed when the roof of a limestone cavern collapses?
 a. Tarn
 c. Swallow hole
 b. Polje
 d. Doline
15. Which of the following is unrelated to the denudation action of mass movement?
 a. Basal sapping
 c. Landslide
 b. Exfoliation
 d. Mud flow
16. What does a 'hydrograph' display?
 a. Variations in river discharge over time.
 b. Variations in water temperature against discharge.
 c. Variations in snowfall over time.
 d. Variations in sediment concentration against river discharge.
17. When all pore spaces are filled and the water table is at the surface this results in:
 a. Infiltration-excess overland flow
 c. Infiltration
 b. Saturation-excess overland flow
 d. Through flow
18. Which of the following is not one of the major paths for water entering the soil?
 a. Travels laterally through the soil
 c. Infiltration-excess overland flow
 b. Percolates into bedrock
 d. Taken up by plants and transpired
19. Flood frequency/return period can be calculated if long term river level records are available. If a water level greater than 20 m occurred 10 times in 10 years the return frequency of the 20 m flood at a given point would be:
 a. Ten times a year
 c. Once every ten years
 b. Ten times every twenty years
 d. Once a year
20. What are the three components of the stream power equation?
 a. Hydraulic radius, channel slope and dissolved oxygen levels.
 b. Stream discharge, channel slope and water density.
 c. Channel slope, river width and mean annual precipitation.
 d. Stream discharge, river width and river depth.

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. a. Discuss the different interdisciplinary approaches to geomorphology. 3
 b. What is *threshold* and *relaxation time* in geological process? 2
 c. Enlighten the fundamental concept of *uniformitarianism* with suitable example. 5
2. a. Classify the major geomorphic environments. 3
 b. Distinguish between positive and negative feedback with suitable example. 2
 c. Briefly specify the controls of safety factor of a slope segment. 3
 d. Point out the geologic characteristics of Meghalaya formation. 2
3. a. What is the importance of Geomorphological studies in Geography? 2
 b. Distinguish between plate boundary and plate margin. 2
 c. Highlight the mechanism of intra-plate volcanic activities with examples. 4
 d. What is *quantitative geomorphology*? 2
4. a. What do you mean by *aftershock*? 2
 b. Discuss the causes and mechanism of earthquakes of Indian plate. 6
 c. Bring out the location of *ring of fire*. 2
5. a. How does '*tectonic window*' develop in '*nappe*'? 2
 b. Differentiate *normal fault* from *reverse fault*. 2
 c. Discuss different types of volcanic intrusive topography with suitable examples. 5
 d. What is *tephra*? 1
6. a. What do you mean by *weathering front*? 2
 b. Discuss the landforms developed by differential weathering. 3
 c. Describe with suitable diagrams, the different landform features that may be seen on a riverine floodplain region. 5
7. a. Illustrate the major types of surface subsidence. 3
 b. Discuss the different landforms associated with alpine glaciers. 5
 c. What is *inner floodplain*? 2
8. a. What are the basic concepts and objectives of *Applied Geomorphology* as given by Goudie and Huggett? 3
 b. Write the application of Applied Geomorphology in engineering exploration in Meghalaya plateau. 5
 c. What is meant by *Terrain Analysis*? 2

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