Roll No. .....

E–773

M. Sc. (Third Semester)

EXAMINATION, Dec.-Jan., 2020-21

GEOLOGY

Paper Third

(Geomorphology and Remote Sensing)

Time : Three Hours] [*Maximum Marks : 80*

[*Minimum Pass Marks : 16*

Note : Attempt all Sections as directed.

Section—A 1 each

(Objective/Multiple Choice Questions)

Note : Attempt all questions.

Choose the correct answer :

1. Difference between the highest and lowest elevations specific to an area is known as :

   (a) Altitude

   (b) Topography

   (c) Relief

   (d) Landform

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2. Meandering channels follow a winding course with a sinuosity ratio of :

   (a) 1.1

   (b) 1.2

   (c) 1.4

   (d) ≥ 1.5

3. The initial erosion of material not eroded and transported earlier is known as :

   (a) Primary erosion

   (b) Secondary erosion

   (c) Tertiary erosion

   (d) Weathering

4. Which of the following is more suitable for identifying different minerals ?

   (a) Panchromatic remote sensing

   (b) Multispectral remote sensing

   (c) Hyperspectral remote sensing

   (d) Microwave remote sensing

5. Which of these dataset is more useful for studying subsurface coal fires in Jharkhand ?

   (a) LISS III

   (b) LISS IV

   (c) AWiFS

   (d) TM

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6. Which band of LISS III data is most suitable for extracting shoreline ?

   (a) Band 2

   (b) Band 3

   (c) Band 4

   (d) Band 5

7. Which of these satellite sensor acquires data in thermal infrared region of EMS ?

   (a) LISS III

   (b) LISS IV

   (c) AWiFS

   (d) TM

8. Which of these dataset is more likely to have the highest spatial resolution for topographic analysis ?

   (a) LIDAR

   (b) Carto SAT

   (c) SPOT HRS

   (d) None of the above

9. Which of these data is more likely to be used for ground-water withdrawal related studies ?

   (a) TM

   (b) ETM^{+}

   (c) LISS IV

   (d) GRACE

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10. Which of the following is not an erosional landform ?

    (a) Tafone

    (b) Alveoli

    (c) Anammas

    (d) Point bar

11. True karst may not form in which of these rocks ?

    (a) Limestone

    (b) Dolomite

    (c) Halite

    (d) Ice

12. The erosional feature intermediate between a rill and an arroyo is called :

    (a) Gully

    (b) Wadis

    (c) Coulee

    (d) None of the above

13. The streams common in arid environments that flow after occasional storms but are dry the rest of the time are known as :

    (a) Perennial

    (b) Intermittent

    (c) Ephameral

    (d) None of the above

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14. The gradient of water surface line of a river from source to mouth is :

    (a) Knick point

    (b) Long profile

    (c) Slope

    (d) Base level

15. Accumulation of alluvium at the place where a river flow into a lake is :

    (a) Pseudodelta

    (b) Lacustrine delta

    (c) Lake bed

    (d) None of the above

16. Which of these is an example of glacial landform ?

    (a) Crag-and-tail

    (b) Gendermes

    (c) Flyggbergs

    (d) All of the above

17. A large, usually elongated, closed depression with a flat floor is termed as :

    (a) Sinkhole

    (b) Doline

    (c) Uvalor

    (d) Polje

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18. Landforms produced by the earth's interior processes without the intervention of the forces of denudation are called :

    (a) Tectonic

    (b) Fluvial

    (c) Aeolian

    (d) Karst

19. Which of the following is an example of great escarpments on passive margin ?

    (a) Eastern Ghats

    (b) Western Ghats

    (c) Himalaya

    (d) None of the above

20. Which of the following separate ice moving down opposite flanks of an ice sheet ?

    (a) Drainage divides

    (b) Ice divides

    (c) Ice streams

    (d) Ice shelf

Section—B

2 each

(Very Short Answer Type Questions)

Note : Attempt all questions. Write answer in 2-3 lines.

1. Define the term geomorphic cycle.
2. Discuss soil as a product of weathering.

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3. Define alluvial fan.
4. What is Zeugen ?
5. Define the term terrain evaluation.
6. What is stereopair ?
7. What is Esker ?
8. How are dripstones formed ?

Section—C 3 each

(Short Answer Type Questions)

Note : Attempt all questions. Write answer in about 75 words.

1. Describe mass-wasting and its types.
2. Explain river valley.
3. Write a note on moraine and its types.
4. What are aerial photographs ? Briefly discuss its different types.
5. Discuss the landforms developed due to volcanic activities.
6. Explain atmospheric window.
7. What are structural landforms ?
8. What is image resolution ? Briefly describe its different types.

Section—D **4** each

(Long Answer Type Questions)

Note : Attempt all questions. Write answer in about 150 words.

1. Explain the term weathering and discuss the commonly occurring processes in chemical weathering with examples.

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Or

What do you understand by Drainage Pattern ? Describe different types of drainage patterns.

2. Discuss depositional landforms developed by geological action of wind.

Or

Describe erosional coastal landforms.

3. Write a note on geomorphic regions of India.

Or

Give an account of advantages and limitations of various remote sensing platforms for geomorphological studies.

4. Explain the interaction of EMR with earth's surface features.

Or

What do you understand by visual image interpretation ? Discuss the relative importance of visual and digital image interpretation techniques.

5. Describe applications of remote sensing in groundwater evaluation.

Or

Discuss Indian space missions and their role in geological studies.

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