(6 pages)

Reg. No. : .....

Code No. : 30541 E **Sub. Code : CMGE 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

First Semester

Geology

PHYSICAL GEOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which mineral is more resistant for Weathering?

   (a) Biotite (b) Garnet

   (c) Quartz (d) Olivine

2. The water supplying around a stream is called

   (a) Command area (b) Drainage area

   (c) Basin divide (d) Non-Command area

3. Conical opening at the top of a volcano is

(a) Caldera (b) Pyroclastics

(c) Lapilli (d) Crater

4. River existing before orogeny are known as

(a) Antecedent rivers (b) Misfit rivers

(c) Consequent rivers (d) Subsequent rivers

5. The residual sheet of materials found in arid areas after wind blast erosion is known as

(a) Desert sheet (b) Deflation sheet

(c) Deflation hallows (d) Desert pavements

6. Wind deposits of silt and clay are

(a) Sand dunes

(b) Loess

(c) Desert

(d) Sand dunes and Desert

7. Average density of the ocean water is

(a) 1.5 gm/cc (b) 1.25 gm/cc

(c) 1.025 gm/cc (d) 1 gm/cc

8. A beach separated from mainland by lagoons is

(a) Barrier beach (b) Tombolo

(c) Spit (d) Bar

9. Exfoliation is characteristically found in

(a) Spilites

(b) Arkoses

(c) Litharenite

(d) Granites

10. The point of origin of an earthquake is

(a) Focus (b) Epicentre

(c) Intensity (d) Magnitude

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a short note on Carbon dating.

Or

(b) Give an account on Uniformitarianism.

12. (a) Write short notes on chemical weathering.

Or

(b) Give an account on desert features.

13. (a) Write a note on Glacier and its types.

Or

(b) Write a short note on erosional features of ocean waves.

14. (a) Write short notes on depositional features formed by rivers.

Or

(b) Give an account on Vertical distribution of groundwater with neat sketch.

15. (a) Write short notes on Mid-Oceanic Ridges.

Or

(b) Write a note on Volcanoes and their classification based on its structure.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Write a detailed note on Age of the Earth.

Or

(b) Write a detailed note on Solarsystem and its components.

17. (a) Give a account on types, agents and process of weathering.

Or

(b) Give a note on Erosional and depositional features developed by wind.

18. (a) Write an essay on work of Glaciers.

Or

(b) Give an account on various marine depositional features

19. (a) Write a detailed note on types of streams and various drainage patterns.

Or

(b) Write a note on erosional and depositional features of work on groundwater.

20. (a) Write a detailed account on various plate boundaries.

Or

(b) Write a note on intensity and magnitude scale of Earthquake.

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(6 pages) **Reg. No. :** .....

Code No. : 30542 E **Sub. Code : CMGE21**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Second Semester

Geology — Core

STRUCTURAL GEOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A scale is
   (a) Ratio between distance on ground
   (b) Ratio between distance on maps and representation on ground
   (c) The ratio between ground and GPS
   (d) Ratio between atmosphere and map

2. The direction of line formed by intersection of horizontal plane with inclined plane.

(a) Dip (b) True dip

(c) Trend (d) Strike

3. _____ develops when forces move away from a common center

(a) Torsion (b) Tension fractures

(c) Couple (d) Shear fracture

4. To represent Earth's features, topographic maps use

(a) Dotted lines (b) Colors

(c) Shades (d) Solid lines

5. _____ are caused by displacement along a non-planner fault

(a) Fault-bend folds

(b) Fault propagation folding

(c) Detachment folding

(d) Ptygmatic fold

6. San Andreas fault is an example for

(a) Normal fault

(b) Reverse fault

(c) Transverse fault

(d) Strike-slip fault

7. Joints which are approximately perpendicular to fold axes.

(a) Cross joints (b) Longitudinal joints

(c) Strike joint (d) Master joint

8. _____ which divide sedimentary layers from metamorphic and intrusive igneour rocks

(a) Nonconformity

(b) Para unconformity

(c) Disconformity

(d) Angular unconformity

9. _____ cleavage contains microlithons that were warped by a previous foliation

(a) Slaty cleavage

(b) Spaced refraction

(c) Crenulation cleavage

(d) Flow cleavage

10. The concept of petro fabric analysis in structural geology is first introduced by

(a) Hobbs

(b) Billings

(c) Sander

(d) Hills

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Palimpset – Write short notes on scope of structural geology.

Or

(b) Explain the measurement of strike using clinometer.

12. (a) Write a short note on clippe and Fenster.

Or

(b) Explain stress ellipsoid.

13. (a) Explain criteria for recognizing faults in field.

Or

(b) Define fold and explain elements of fold.

14. (a) Write a short note on diconformity and nonconformity.

Or

(b) Discuss how to identify an unconformity in field.

15. (a) Write a short note on slaty cleavge and crenulation cleavge.

Or

(b) Write a short note on shear fractures and extensional fractures.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write an essay on various methods of representing physiographic features.

Or

(b) Write an essay on importance of structural geology and its application in various discipline.

17. (a) Elaborate the following heading (i) Planning for field work (ii) Measurement of structural features.

Or

(b) Give a detailed note on various erosional features.

18. (a) Write an essay on geometric classification of folds.

Or

(b) Describe the elements of fault and various types of faults.

19. (a) Write an essay on geometric, classification and mechanism of joints.

Or

(b) Explain the origin and classification of unconformities.

20. (a) Describe the kinds and origin of lineation.

Or

(b) Write an essay on cleavage.

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(6 pages)

Reg. No. : .....

Code No. : 30543 E **Sub. Code : CMGE 31**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Geology – Core

CRYSTALLOGRAPHY AND MINERALOGY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The intersection of two adjacent faces is called as

(a) Edge (b) Solid angle

(c) Zone (d) None of the above

2. Goniometer are used to measure

(a) Solid angle (b) Interfacial angle

(c) Indices (d) Contact angle

3. The total number of the crustal system is

(a) 6 (b) 7

(c) 8 (d) 10

4. 9 planes, 13 axes and center is in ———— system.

(a) Isometric (b) Tetragonal

(c) Hexagonal (d) Orthorhombic

5. A colour of the mineral based on

(a) Reflection

(b) Refraction

(c) Absorption

(d) Reflection and absorption

6. How do you test the streak of a mineral?

(a) throw it against hard surface

(b) kick until it break

(c) using streaking plate

(d) powder it

7. Black variety of quartz is ————————

(a) Morian (b) Blood stone

(c) Chert (d) Jasper

8. Single chain Ino-silicate structure present in

(a) Quartz (b) Pyroxenes

(c) Feldspar (d) None of the above

9. Sign of elongation is determined by

(a) Light (b) Quartz-wedge

(c) Mica plate (d) None of the above

10. Twinkling is best seen in

(a) Calcite (b) Quartz

(c) Mica (d) Feldspar

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the interfacial angles and its measurement.

Or

(b) Write short notes on miller indices.

12. (a) Enumerate orthorthombic system.

Or

(b) Discuss tetragonal system.

13. (a) Write a notes on polymorphism and pseudomorphism of minerals.

Or

(b) Discuss atomic substitution and solid solution of minerals.

14. (a) Discuss the properties of pyroxene group of minerals.

Or

(b) Write short notes on amphibole group of minerals.

15. (a) Give a short account on extinction and twinning properties of minerals.

Or

(b) Describe the refractive index and total reflection.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the morphological characters of crystal.

Or

(b) Give a detailed account on symmetry elements.

17. (a) Write brief detail note on cubic system.

Or

(b) Discuss the morphological study of tetragonal and hexagonal systems.

18. (a) Write a detailed note on physical properties of minerals.

Or

(b) Explain the chemical properties of minerals.

19. (a) Explain the composition and properties of feldspar group of minerals

Or

(b) Describe quartz group of minerals along with physical and chemical properties.

20. (a) Discuss the optical properties of minerals.

Or

(b) Write an essay on parts of polarizing microscope.

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(6 pages) **Reg. No. :** .....

Code No. : 30544 E **Sub. Code : CSGE 31**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Geology — Skill Based Core

Elective – REMOTE SENSING AND GIS

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who coined the term, 'Remote sensing'?

(a) Evelyn L. Pruitt (b) Gaspard Felix

(c) Wilbur Wright (d) Albert Einstein

2. Visible ultra violet rays ranging between

(a) 0.4 um to 0.7 um (b) 0.2 um to 0.9 um

(c) 0.5 um to 0.7 um (d) < 10 um

3. The altitude of geostationary satellites are

(a) 36000 km (b) 10000 km

(c) 500 km (d) 100 km

4. The Landsat 1 was launched in

(a) 1982 (b) 1972

(c) 1980 (d) 2021

5. The tilting angle of aerial photographs will be

(a) 5 degree (b) 3 degree

(c) 7 degree (d) None of the above

6. The process of examining a remote sensing image and manually identifying the features in that image is called

(a) Image interpretation

(b) Image classification

(c) Image building

(d) Image compression

7. The example of hardware components of GIS is

(a) Auto cad (b) ARC GIS

(c) Keyboard (d) Ms office

8. What are the two general data formats used in GIS?

(a) Vector and raster

(b) Points and lines

(c) Features and attributes

(d) Digital and paper maps

9. The raster data models divide the study area into

(a) rounded cell (b) rectangular cell

(c) triangular cell (d) square cell

10. The conversion of existing map into digital is called as

(a) scanning (b) analyzing

(c) interpretation (d) storage

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the components of remote sensing.

Or

(b) Explain the prosperities of EMR.

12. (a) Differentiate between airborne and spaceborne platforms.

Or

(b) Discuss the various types of image resolution.

13. (a) Illustrate the basic elements of image interpretation.

Or

(b) Enumerate the types of aerial photographs.

14. (a) Define geographic coordinate system.

Or

(b) Write short notes on non spatial data.

15. (a) Give a short account on topological vector model.

Or

(b) Describe attribute data model.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the spectral signature of soil and water.

Or

(b) Give a detailed account on principles of remote sensing.

17. (a) Distinguish the orbits and its types.

Or

(b) Write an essay on satellite types and its uses.

18. (a) Write in detailed notes on mosaics and its application in geology studies.

Or

(b) Explain the aerial photo interpretation elements.

19. (a) Explain the components of GIS.

Or

(b) Describe map projection and its types.

20. (a) Discuss on data base management system.

Or

(b) Write an essay raster data model.

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(6 pages)

Reg. No. : .....

Code No. : 30546 E **Sub. Code : CNGE 31**

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Third Semester

Geology — Non Major Elective

CLIMATOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following is correct order of layers in atmosphere?
   (a) Troposphere, stratosphere, mesosphere, thermosphere, exosphere
   (b) Stratosphere, troposphere, mesosphere, thermosphere, exosphere
   (c) Stratosphere, troposphere, mesosphere, exosphere, thermosphere
   (d) Troposphere, stratosphere, mesosphere, exosphere, thermosphere

2. Which of the following factors is not associated with insolation at the surface of earth?

(a) rotation of earth on its axis

(b) angle of inclination of the sun's rays

(c) transparency of the atmosphere

(d) none of the above

3. Hydrosphere is present in

(a) On the surface

(b) On or below the surface

(c) Above the surface

(d) None of the above

4. The chief component for climate system is

(a) Sun's radiation (b) Wind velocity

(c) Earth rotation (d) None of the above

5. The atmospheric pressure exerted on the earth due to

(a) Sun's radiation (b) Wind velocity

(c) Earth rotation (d) Gravitational pull

6. A cyclone is a region of ———— which occurs in the hot oceans of temperate and tropical latitudes.

(a) High atmospheric pressure

(b) Low atmospheric pressure

(c) Medium pressure

(d) Very high atmospheric pressure

7. Koppen's polar type climates are controlled by

(a) arctic air masses (b) marine wind

(c) drought (d) rainfall

8. Large scale movement of waters in the ocean basins

(a) Ocean circulation (b) Tsunami

(c) Cyclones (d) None of the above

9. Which of the following gas does not contribute to the global warming?

(a) Methane (b) Carbon dioxide

(c) Sulphur (d) Acetylene

10. Which is the most abundantly found greenhouse gas?

(a) Carbon dioxide (b) Water vapour

(c) Methane (d) Nitrous oxide

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the components of climate system.

Or

(b) Explain the properties of atmosphere.

12. (a) Enumerate the various monsoon patterns.

Or

(b) Write detailed notes on sunshine and rainfall.

13. (a) Distinguish between monsoon and local winds.

Or

(b) Write detailed notes on atmospheric moisture.

14. (a) Explain ocean circulation pattern.

Or

(b) Write short notes on climate change.

15. (a) Give a short account on acid rain.

Or

(b) Describe oxone depletion.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the various climate controlling factors.

Or

(b) Give a detailed account on earth's radiation balance.

17. (a) Discuss hydrologic cycle.

Or

(b) Write an essay on weathering elements.

18. (a) Write a essay on cyclones.

Or

(b) Explain diurnal and seasonal variations.

19. (a) Explain the Koppen's classifications of climate.

Or

(b) Describe Thornthwaite's scheme of classifications.

20. (a) Discuss the various effects and impacts of climate change.

Or

(b) Write an essay on global warming. Add notes on its effects and preventing methods.

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