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

Code No. : 11643 E **Sub. Code : SNGE 3 B**

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Third Semester

Geology

Non Major Elective — CLIMATOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Sea breeze is formed during

   (a) Day time

   (b) Night time

   (c) Both

   (d) Seasonal

2. Airmass near to the earth's surface is warmer because it

   (a) radiates heat

   (b) contains dust particles

   (c) is warmed by terrestrial radiation

   (d) is far from the sun

3. The contact of two air masses differing sharply in humidity originates

   (a) statospheric instability

   (b) tropical cyclones

   (c) inter tropical convergence

   (d) temperate cyclones

4. Which one of the following is not a form of precipitation?

   (a) Hall (b) Fog

   (c) Snowfall (d) Rainfall

5. Speed of the wind is measured by

   (a) Barometer

   (b) Hygrometer

   (c) Thermometer

   (d) Anemometer

6. Which of the following winds is called anti trade wind?

(a) Chinook (b) Cyclone

(c) Trphoon (d) Westerlies

7. The climatic zones are classified on the basis of

(a) distance form the equator

(b) Elevation

(c) Rainfall

(d) Distance from the sea

8. In atmosphere the lower most layer is

(a) Troposphere (b) Exosphere

(c) Ionosphere (d) Stratosphere

9. The main cause of global climatic change is

(a) increase in the content of carbon dioxide in the atmosphere

(b) emissions of industrial gases

(c) adding of dust

(d) change in plant cover

10. Global warming is expected to result in

(a) Increase in level of sea

(b) Change in crop pattern

(c) Change in coast line

(d) All of the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain the fundamental principles of climatology.

Or

(b) Discuss the seasonal variation of insolation.

12. (a) Write short note on humidity.

Or

(b) Illustrate the different types of clouds.

13. (a) Write a note on formation of cyclones.

Or

(b) Write a note on extratropical cyclone.

14. (a) Explain the Thornthwaites classification of climate.

Or

(b) Explain the Koppen's classification of climate.

15. (a) Write a note on Greenhouse effect.

Or

(b) Write a note on acid rain and its effect.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write an essay on structure of atmosphere.

Or

(b) Write an essay on Earth's radiation balance.

17. (a) Briefly explain the types of winds.

Or

(b) Briefly explain the type of clouds.

18. (a) Illustrate the effects and geographic distribution of cyclones.

Or

(b) Write an essay on types of cyclones.

19. (a) Write an essay on climate change and its effects.

Or

(b) Enumerate the types of climate.

20. (a) Briefly explain the ozone depletion.

Or

(b) Explain the global warming and its effect.

———————

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

Code No. : 11484 E **Sub. Code : JMGE 22/ SMGE 22**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018.

Second Semester

Geology – Main

CRYSTALLOGRAPHY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. A crystal form consisting of only one face is _____

(a) Sphenoid

(b) Basal Pinacoid

(c) Pedion

(d) Dome

2. A similar mass of mineral with no definite molecular structure is

   (a) Crystal

   (b) Crystalline

   (c) Cryptocrystalline

   (d) Amorphous

3. An enantiomorphous forms have

   (a) Inverted forms

   (b) Right and left handed forms

   (c) Half right and half left

   (d) None of the above

4. By law of rational indices, the values of different intercepts can be represented as

   (a) Numbers (b) Full numbers

   (c) Ratio (d) Zero

5. Cubic system has ———————— forms.

   (a) 9 (b) 15

   (c) 23 (d) 33

6. Odd one out

   (a) Beryl (b) Calcite

   (c) Corundum (d) Garnet

7. The sphenoidal class of orhorhombic class has ——————— plane.

   (a) 2 vertical planes

   (b) 1 vertical plane

   (c) 2 horizontal planes

   (d) Nil

8. In the Triclinic system the inclined axes are

   (a) Two (b) Three

   (c) One (d) None

9. The Brazilian law of twinning occurs in

   (a) Staurolite (b) Fluorite

   (c) Gypsum (d) Quartz

10. Orthoclase feldspars commonly twin with ——————— law.

    (a) Hatched twins

    (b) Manebach

    (c) Carlsbad

    (d) None of the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write a concise account on the formation of crystals.

Or

(b) What are distorted forms?

12. (a) List out the differences between crystalline forms and crystals with examples

Or

(b) Distinguish between Holohedral and Hemihedral forms.

13. (a) Describe the axial characters and symmetry of elements of garnet crystal.

Or

(b) Describe the symmetry of elements and axial characters of calcite crystal.

14. (a) Define and explain the pinacoids of Triclinic system.

Or

(b) Write a note on crystal calamine.

15. (a) Define twinning. Describe various types of twinning.

Or

(b) Briefly explain the twinning in feldspars

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Elucidate the morphological characters of crystals.

Or

(b) Describe the following

(i) Faces

(ii) Forms

(iii) Solid angle

(iv) Edges of crystals.

17. (a) Write an essay on symmetry, elements.

Or

(b) Describe Hemimorphic and Enantiomorphic forms. Give their importance in crystal studies

18. (a) Write an essay on the axial characters and forms present from the important minerals of tetragonal system.

Or

(b) Explain axial characters, symmetry elements and forms seen on galena and diamond.

19. (a) Mention the axial characters and forms present and symmetry elements of Orthorhombic system.

Or

(b) Discuss in details the axial characters and forms present and symmetry elements of Monoclinic system

20. (a) Write elaborately the laws of twins.

Or

(b) How repeated twins are formed? How are they studied with figure?

———————

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

Code No. : 11497 E **Sub. Code : JSGE 4 A**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fourth Semester

Geology

Skill Based Subject – DISASTER MANAGEMENT

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Disasters are
   (a) Manmade
   (b) Natural
   (c) Both man made and natural
   (d) None of these

2. Fires are caused due to errors done by

(a) Animals (b) Plants

(c) Land (d) Human

3. The earthquake ———————— is measured by understanding the destruction caused by earthquakes.

(a) Magnitude (b) Damage

(c) Intensity (d) All of these

4. Which of the seismic wave travels the fastest?

(a) L-wave (b) P-wave

(c) S-wave (d) Surface wave

5. Floodplains are

(a) Zones fanning out the river levees

(b) Zones away from rivers

(c) Zones formed by alluvium

(d) All of these

6. Cyclones with more than 200 km of wind speedare called as

(a) Cyclonic strom

(b) Super cyclones

(c) Cyclonic surge

(d) Giant cydone.

7. The intensity of cyclones increases in
   (a) Mature stage
   (b) Occlusion stage
   (c) Incipient stage
   (d) Initial stage

8. Debris flow can reach a speed of
   (a) 26 km/hour
   (b) 36 km/hour
   (c) 50 km/hour
   (d) None of the above.

9. The coastal areas of Northern Tamilnadu, South Andhra Pradesh and Orissa are
   (a) More prone to cyclonic disasters
   (b) Vulnerable to coastal flooding
   (c) Prone to seismic activity
   (d) Prone to Landslides

10. Deforestation is the main cause for
   (a) Snow avalanches
   (b) Landslides
   (c) Water avalanches
   (d) None of these

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Present a brief account on the types of disasters.

Or

(b) Write an essay on disaster profile of India.

12. (a) What are earthquakes? How do they occur?

Or

(b) With a simple diagram explain a seismograph and a seismogram.

13. (a) Write on the properties of floods as a natural hazard.

Or

(b) How floods are mitigated?

14. (a) Comment on the origin and outbreak of a cyclone.

Or

(b) What is a Tropical cyclone?

15. (a) Explain the properties of slopes. Add a note on their protection.

Or

(b) Explain a snow avalanche. How are they predicted?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss the causes and effects of disasters.

Or

(b) Describe the most dangerous hazards of the world.

17. (a) Explain the impact and effect of earthquake in India.

Or

(b) Explain the nature of damage caused by earth quake.

18. (a) Write a detailed account on the monsoon floods in India.

Or

(b) Bring out an essay on the human reasons for increase of flood hazards.

19. (a) Draw a detailed report on the cyclone prone regions of India.

Or

(b) Narrate a report on the effects of cyclones.

20. (a) Explain the preparedness steps, effects and impacts of Landslides and snow Avalanches.

Or

(b) Discuss the different type of mass movement and their causes.

———————

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

Code No. : 11495 E **Sub. Code : JSGE 3 A/ SSGE 3 A**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018.

Third Semester

Geology — Main

Skill Based Subject — EXPLORATION GEOPHYSICS

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Electrical resistivity of clay material is ————.

   (a) 100 to 150 Ωm (b) 100 to 500 Ωm

   (c) 1 to 20 Ωm (d) >1000 Ωm

2. The unit of resistance is

   (a) Ampere (b) Volt

   (c) Ohms (d) Mhos

3. Magnetic property of earth comes from ————————.

(a) Crust (b) Mantle

(c) Core (d) Unconformity

4. The temperature at which a magnetic body is demagnetized

(a) Peritectic point (b) Curie point

(c) Eutectic point (d) Daly's point

5. Gravity method gives

(a) Density (b) Texture

(c) Porosity (d) Buoyancy

6. The unit of measurement of gravity is

(a) Millivolt (b) Milligal

(c) Milligamma (d) Milliampere

7. The instrument used to produce seismic energy in water bodies ————————.

(a) Weight dropper (b) Aqua meter

(c) Seismograph (d) Air gun

8. The seismic wave that can travel in all media is

(a) P-waves (b) S-waves

(c) Love waves (d) Surface waves

9. The widely used geophysical technique for oil exploration is

   (a) Seismic reflection

   (b) Seismic refraction

   (c) Telluric method

   (d) AFMAG

10. Nature of aquifers and the salinity of water in the borewell is determined by

   (a) Resistivity logging

   (b) Gravity method

   (c) Seismic method

   (d) Magnetic method

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write a note on self-potential method.

Or

   (b) What are all the field arrangements are made the Schlumberger method?

12. (a) Explain the elements of earth's magnetic field.

Or

(b) Describe the working principles of Magnetometers.

13. (a) Define the Bouguer correction.

Or

(b) Write short notes with neat picture :

(i) Static gravimeter

(ii) Zero length spring gravimeter

14. (a) Explain Geiger Muller counter.

Or

(b) Enlighten the Seismic velocities in earth's materials.

15. (a) Define the borehole Geophysics.

Or

(b) Define Sonic logging.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Outline the principle involved in inverse slope interpretation of resistivity data.

Or

(b) With neat diagrams, elaborate the Wenner, Schlumberger and Dipole-Dipole electrode arrangements. Add a note on their merits and defects.

17. (a) Enumerate in detail the different types of Magnetometer.

Or

(b) Briefly explain the classification of Magnetic materials.

18. (a) Elucidate the magnetic properties of minerals and rocks.

Or

(b) Describe gravity method in basic requirements and proper procedure and methods of doing geological field work in region.

19. (a) Write an essay on different types of seismic waves and their propagation characters.

Or

(b) Explain different types of shooting techniques adopted in seismic prospecting.

20. (a) Enumerate the principles of Airborne geophysical survey in oil exploration.

Or

(b) Role of radioactivity in oil exploration.

———————

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

Code No. : 11481 E **Sub. Code : JMGE 11/ SMGE 11**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Geology – Main

GENERAL GEOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A system of dating developed for the purposes of study of the earth's history is called as

   (a) Relative dating

   (b) Absolute dating

   (c) Radiometric dating

   (d) Geochronology

2. The portion of the mantle below a depth of about 1000 kilometers is termed as

   (a) Upper mantle

   (b) Asthenosphere

   (c) Gutenberg discontinuity

   (d) Lower mantle

3. The splitting or disintegration of rocks as the result of the freezing of the water contained is known as

   (a) corrosion (b) abrasion

   (c) frost wedging (d) hydration

4. The sweeping erosive action of the wind over the ground is called as _____

   (a) solution (b) deflation

   (c) oxidation (d) hydration

5. _____is a landform structure formed by gravity collapse, consisting of a bed that buckles into a series of folds as it slides down the flanks of an anticline.

   (a) Plunge pools (b) Potholes

   (c) Cascade (d) Meanders

6. An embankment bordering one or both sides of a sea channel or the low-gradient seaward part of a canyon or valley is called as

(a) deltas (b) point bars

(c) natural levees (d) swamps

7. _____is an accumulation of glacial drift deposited chiefly by direct glacial action and possessing initial constructional form independent of the floor beneath it.

(a) cirque (b) calving

(c) crevasse (d) moraine

8. A low, long, steep-sided mound of glacial drift, commonly stratified sand and gravel, deposited as an alluvial fan or delta at the terminal margin of a melting glacier is called as

(a) kame (b) moraines

(c) glacial accretion (d) horn

9. _____is a mudflow or landslide of pyroclastic material occurring on the flank of a volcano

(a) fissure (b) lahar

(c) nuee ardente (d) sink hole

10. Mercalli scale is a scale for classifying the magnitude of an earthquake.

(a) 12 - point (b) l5-point

(c) 25-point (d) 10-point

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe any one of the hypothesis of origin of solar system.

Or

(b) Explain the tidal hypothesis.

12. (a) Write an essay on biological weathering.

Or

(b) Explain sand dunes formation.

13. (a) Explain the terms deltas, alluvial plain and flood plain.

Or

(b) Explain an artesian well with neat diagram.

14. (a) Explain any two depositional features of glaciers.

Or

(b) Write notes on

(i) cirque

(ii) moraines.

15. (a) Write notes of earth quakes prone zones of the world.

Or

(b) Explain different types of volcanoes based on the types of Volcanic Cones.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe in detail relative age determination of Earth.

Or

(b) Explain with neat sketch the Interior of Earth.

17. (a) Write an essay on Process of weathering produced by different agents.

Or

(b) Give an account on landforms found in Deserts.

18. (a) Explain different inland water depositional features.

Or

(b) Discuss in detail different landforms created by groundwater movement.

19. (a) Give an account on geological work of sea.

Or

(b) Write an essay on landforms of glaciers.

20. (a) Describe various mitigation methods to prevent loss from Earthquake.

Or

(b) Write an essay on different types of plate boundaries and associated Geological features.

———————

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

Code No. : 10434 E **Sub. Code : GMGE 11**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

First Semester

Geology – Main

GENERAL GEOLOGY

(For those who joined in July 2012-2015)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Milky Way is a
   (a) Group of fixed stars
   (b) Luminous celestral bodies
   (c) Group of Galaxy
   (d) None

2. Nebular Hypothesis was proposed by

(a) Kant (b) Chamberlin

(c) Moulton (d) Nebular

3. Disintegration of rocks is called

(a) Weathering (b) Erosion

(c) Deposition (d) All

4. ———————— is an ersional feature of wind.

(a) Dune (b) Pedestal rock

(c) Meandering (d) None

5. Narrow and deep river valley developed in hard rocks are called.

(a) Channel (b) Cascade

(c) Gorges (d) Mesas

6. Branching tree like drainage pattern is known as

(a) Trellis (b) Radial

(c) Parallel (d) Dentritic

7. Floating ice hills are called

(a) Glacial (b) Ice berg

(c) Moraines (d) None

8. Sea Stack is formed by

(a) Wave erosion

(b) Glacial action

(c) Water current

(d) Weathering

9. Instrument used to record earthquake is

(a) Vibrator (b) Seismogram

(c) Seismograph (d) None

10. A glacier is

(a) Moving solid ice

(b) Immovable solid ice

(c) Thin mass of ice

(d) None of the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Short note on Nebular Hypothesis.

Or

(b) Brief note on lithosphere.

12. (a) Explain spheroidal weathering.

Or

(b) Describe important desert features.

13. (a) Write short notes on Delta.

Or

(b) Short note on springs.

14. (a) Give an account on long shore current.

Or

(b) Discuss types of glaciers.

15. (a) Explain structure of an ideal volcano with neat sketch.

Or

(b) Write the important characteristics of plates.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Narrate the scope and branches of Geology.

Or

(b) Discuss methods for determining age of the earth.

17. (a) Detailed account on chemical weathering.

Or

(b) Describe important erosional features of wind.

18. (a) Discuss in detail about drainage patterns.

Or

(b) Discuss the geological work of groundwater.

19. (a) Explain the depositional features of glaciers.

Or

(b) Give a detailed account on work of sea.

20. (a) Discuss about origin of earthquakes.

Or

(b) Discuss in detail about plate boundries.

———————

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

Code No. : 11489 E **Sub. Code : JMGE 5 A**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fifth Semester

Geology – Main

Major Elective — GEOSTATISTICS AND COMPUTER APPLICATIONS IN GEOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The data which collected from experiments is said to be
   (a) Data
   (b) Information
   (c) Primary data
   (d) Secondary data

2. In statistics, the term population refers to

   (a) Set of data

   (b) Collection of data

   (c) Number of variables

   (d) Number of people

3. The data which are with assumptions about the parameters of the population distribution is called

   (a) Optimistic test

   (b) Parametric test

   (c) Nonparametric test

   (d) x^2 test

4. In Chi-Square goodness of fit test, the term goodness of fit is used to

   (a) Compare the observed sample distribution with the expected probability distribution

   (b) Compare the expected observed sample distribution with the observed probability distribution

   (c) Compare the variables with the expected probability distribution

   (d) Compare the variables with the expected probability variation

5. Which kind of data is required for Principal component analysis (PCA)

(a) Multi data set (b) Multivariate data

(c) Variable data (d) All

6. ———————— are simple correlations between the variables and the factors.

(a) Factor scores

(b) Factor loadings

(c) Correlation loadings

(d) Variance score

7. A keyboard is which of the following kind of device

(a) Input (b) Output

(c) Analytical (d) Display

8. To store information which of the following part of the computer helps

(a) Disk drive (b) CPU

(c) Modem (d) None

9. What is the point line spacing of single spacing in MS-WORD document

(a) 10 (b) 12

(c) 14 (d) 16

10. What is the maximum font size you can apply for any character in word

    (a) 163

    (b) 1638

    (c) 16038

    (d) None of the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Short note on sampling.

Or

    (b) Short note on student's 't' test.

12. (a) Spearman's rank correlation.

Or

    (b) Describe ANOVA and its relevance in geological data.

13. (a) Shortly describe type of data used in PCA.

Or

    (b) Explain the similarities and differences between Discriminate Analysis and PCA.

14. (a) Short note on input devices of computer.

Or

(b) Short note on flow chart.

15. (a) Short note on desktop features.

Or

(b) Short note on menu bar.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe about measures of dispersion and skewness.

Or

(b) Graphical representation of data.

17. (a) Explain correlation and regression with example.

Or

(b) Discuss in detail about the application of probability in geosciences.

18. (a) Discuss in detail about discriminate analysis. How it is used in geological data analysis?

Or

(b) Discuss important hierarchical clustering methods.

19. (a) Describe general structure of a computer with sketch.

Or

(b) Discuss computer applications in geology.

20. (a) Describe various tools and features of windows 2013.

Or

(b) Discuss applications of MS EXCEL 2013 in geological data analysis.

———————

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

Code No. : 10443 E **Sub. Code : GMGE 62**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Sixth Semester

Geology — Main

HYDROGEOLOGY

(For those who joined in July 2012–2015)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The principal source for groundwater is _____.

   (a) River (b) Lakes
   (c) Precipitation (d) Ocean

2. The upper surface of the saturated zone of groundwater is called

   (a) Zone of aeration (b) Zone of saturation
   (c) Water table (d) Capillary water

3. Hydraulic conductivity K depends on

   (a) Properties of fluid alone

   (b) Characteristics of medium

   (c) Both (a) and (b)

   (d) None of the above

4. Confined aquifer is overlain by

   (a) Lake (b) Springs

   (c) River (d) Glacier

5. Which one of the following statement is correct?

   (a) Clay has lower resistivity than sand

   (b) Sand has lower resistivity than shale

   (c) Dense limestone has lower resistivity than Jay and sand

   (d) All the above statements are correct

6. Sand is generally characterised by

   (a) High porosity

   (b) High permeability

   (c) High specific retention

   (d) Both (a) and (b)

7. ———————— is less expensive and one of most valued geophysical method in groundwater exploration.

   (a) Electrical Resistivity method

   (b) Density method

   (c) Magnetic method

   (d) Gravity method

8. The water that is entrapped in sedimentary rocks during their formation is called

   (a) Meteoric water (b) Underground water

   (c) Connate water (d) Vadose water

9. The major cations that constitute the chemical quality of groundwater are

   (a) Ca, Mg, Na, K

   (b) HCO_3, CO_3, Cl, SO_4

   (c) Mn, Fe, Cr

   (d) Pb, Zn

10. Drinking water standard of Total Dissolved Solids is

   (a) 500 ppm (b) 1000 ppm

   (c) 700 ppm (d) 2000 ppm

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write a note on hydrological cycle.

Or

(b) Describe the different types of springs.

12. (a) Briefly explain Darcy's law with a neat sketch.

Or

(b) Explain the terms confined and unconfined aquifer.

13. (a) Briefly explain the structural controlled occurrence of groundwater.

Or

(b) Write a note on porosity and permeability.

14. (a) Describe the geologic method of surface investigation of groundwater.

Or

(b) Briefly explain the groundwater investigation by Wenner's electrode arrangement.

15. (a) Write a brief account on groundwater standard for agriculture purposes.

Or

(b) Short note on major dissolved constituents presence in groundwater.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Elucidate the origin and occurrence of groundwater.

Or

(b) Describe the various hydrological parameters in groundwater.

17. (a) Distinguish between a perched aquifer and a leached aquifer.

Or

(b) Define the following

(i) Hydraulic conductivity

(ii) Specific conductance.

18. (a) Discuss in detail the occurrence of groundwater.

Or

(b) Explain in detail the hydrological properties of rocks.

19. (a) Give a brief account on the application of remote sensing for groundwater exploration.

Or

(b) Write an essay on groundwater investigation by Schlumberger's electrode arrangement.

20. (a) Write a brief account of groundwater standards for drinking water purposes.

Or

(b) Comment on various methods of measuring the chemical qualities of groundwater.

———————

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

Code No. : 11487 E **Sub. Code : JMGE 51**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fifth Semester

Geology – Main

IGNEOUS PETROLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Trachyte is a volcanic equivalent of ————————

(a) Syenite

(b) Diorite

(c) Phonolite

(d) Andesite

2. The thin rocky crustal layer of the Earth is known as ————————

(a) Lithosphere

(b) Asthenosphere

(c) Pyrosphere

(d) Barysphere

3. The iron meteorites are also called as ————————

(a) Aerolites (b) Asteroids

(c) Siderites (d) Siderolites

4. The graodiorites in which the plagioclase is greatly in excess of the Orthoclase is termed as ————————

(a) Quartz diorite (b) Granite

(c) Monzonite (d) Tonalite

5. The classification of rocks based on the characters determinable in hand specimen is called as ———————— classification

(a) Genetic

(b) Textural

(c) Field or Megascopic

(d) Structural

6. The Lamprophyre rock which has Augite and/or Hornblende and predominance of orthoclase is called

(a) Minette (b) Vogesite

(c) Alnoite (d) Hersantite

7. The composition of Orthosilicic acid is

(a) H_4SiO_4 (b) $H_4Si_5O_8$

(c) $H_4Si_2O_6$ (d) $H_5Si_8O_{12}$

8. What is the eutectic proportion of Orthoclase : Quartz?

(a) 72.5:27.5 (b) 42:58

(c) 70:30 (d) 45:55

9. Rocks in which released or reactional constituents are predominant are called ———————

(a) Trimorphic (b) Doliomorphic

(c) Allotriomorphic (d) Polymorphic

10. The pyroxenes were formed by the ——————— differentiation.

(a) Gravitational

(b) Filterpressing

(c) Volatile

(d) Liquid immiscibility

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write notes on the following.

(i) Phacolith

(ii) Chonolith.

Or

(b) Write brief notes on Pillow structure.

12. (a) Discuss the classification of Igneous rocks based on the Saturation principle.

Or

(b) Write the tabular classification of Igneous rocks.

13. Write the petrographic characters of the following

(a) (i) Granite

(ii) Granodiorite

Or

(b) (i) Norite

(ii) Basalt.

14. (a) Explain the mode of Crystallisation of an Unicomponent magma.

Or

(b) Discuss the Niggli's 14 molecules as the principal constituents of igneous magma.

15. (a) Write the evidences for the process of differentiation.

Or

(b) Discuss the role of volatiles in differentiation.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Write an essay on Rock cycle.

Or

(b) Write a comprehensive note on the Inequigranular textures.

17. (a) Describe the C.I.P.W. classification of igneous rocks.

Or

(b) Write the classification of Igneous rocks proposed by Rosenbusch.

18. (a) Write a detailed note on Syenite clan of rocks.

Or

(b) Describe the petrographic characters of Lamprophyres.

19. (a) Discuss the nature of primary magma.

Or

(b) Write notes on Eutectic crystallization.

20. (a) Write a detailed note on the petrographic provinces.

Or

(b) Write detailed notes on the following

(i) Differentiation by crystallisation

(ii) Filteration differentiation.

———————

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

Code No. : 11492 E **Sub. Code : JMGE 5 D**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fifth Semester

Geology — Main

Major Elective — MARINE GEOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The subject Oceanography is study of
   (a) Oceans and Seas
   (b) Sea
   (c) Ocean
   (d) Ocean, Sea and Island

2. Abbreviation of SONAR is

   (a) Sea Ocean Navigation Radar

   (b) Sound Navigation Radar

   (c) Sound and Range

   (d) Sound Navigation and Ranging

3. Longitudinal waves are otherwise known as

   (a) Push Pull waves

   (b) Shore waves

   (c) Pull Pull waves

   (d) All

4. Periodical rise and fall of the ocean level in response to gravitational interaction of the earth, moon and sun is called

   (a) Surge

   (b) Tide

   (c) Wave

   (d) Sea level

5. Large scale movements of currents in the ocean are termed

   (a) Oceanic circulation

   (b) Giant currents

   (c) Current circulation

   (d) Seiche

6. Coriolis effect happens because of
   (a) Earth's rotation
   (b) Waves
   (c) Wind
   (d) Temperature

7. The oceanic crust thickness is approximately
   (a) 2-5 km (b) 5-12 km
   (c) 10 - 15 km (d) 15-25 km

8. The process sea floor spreading generally occurs at
   (a) Mid ocean ridge
   (b) Sea mount
   (c) Fault zone
   (d) Sea floor

9. The sea level changes because of volume of water stored in the ocean is described as
   (a) Static (b) Astatic
   (c) Eustatic (d) Non static

10. EEZ means
   (a) Extensive Economic Zone
   (b) Exclusive Economic Zone
   (c) Extended Economic Zone
   (d) None

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe the principles of Eco sounder.

Or

(b) Briefly discuss types of bottom sediment sampler.

12. (a) Write a short note on wave types.

Or

(b) Give a short description about wave breaker.

13. (a) Explain Ekman spiral.

Or

(b) Briefly describe about littoral process.

14. (a) Short note on turbidites.

Or

(b) Briefly explain about continental shelf.

15. (a) Describe impact of seal level changes.

Or

(b) Short note on manganese nodules.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe in detail about historical development of marine geology.

Or

(b) Discuss the methods and instruments used for water and sediment samples collection in ocean.

17. (a) Give a detailed account on origin of waves.

Or

(b) Discuss in detail about tides.

18. (a) Give a detailed account on tsunami waves and its characteristics.

Or

(b) Discuss in detail about ocean currents.

19. (a) Explain in detail about classification of coasts.

Or

(b) Give a detailed account on sea floor spreading.

20. (a) Describe broadly about classification of marine sediment.

Or

(b) Write an essay on coastal regulation zone.

———————

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

Code No. : 11486 E **Sub. Code : JMGE 41**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fourth Semester

Geology

MICROBIOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The fracture of the mineral quartz is ————.

   (a) Concoidal

   (b) Uneven

   (c) Even

   (d) None of the above

2. The cleavage shown by the feldspar ————————.

(a) One-directional

(b) Two-directional

(c) Three-directional

(d) None of the above

3. The iron bearing garnet is ————————.

(a) Pyrope (b) Grossularite

(c) Uvarovite (d) None of the above

4. The pleochroic halos are present in ————————.

(a) Beryl (b) Cordierite

(c) Zircon (d) All of the above

5. The extinction shown by diopside is

(a) Straight

(b) Inclined

(c) Both (a) and (b)

(d) None of the above

6. Percussion figures are shown by ———————— group of minerals.

(a) Mica (b) Chlorite

(c) Serpentine (d) All of the above

7. The composition of sanidine is same as ————.

(a) Microcline (b) Albite

(c) Both (a) and (b) (d) None of the above

8. Dolomite is a ———— carbonate.

(a) Ca (b) Mg

(c) Both (a) and (b) (d) None of the above

9. Zoning is the property being exhibited by ———.

(a) Mica (b) Calcite

(c) Olivine (d) All of the above

10. Orthoclase alters to ————.

(a) Sericite (b) Kaolin

(c) Zeolite (d) None of the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) What is Birefringence? Explain its significance.

Or

(b) Outline the method in derivation of pleochroic scheme.

12. (a) Outline the difference between a silicate and an ore minerals.

Or

(b) Give the meaning of metalic and non-metalic minerals.

13. (a) Write any five important differences between Orthoclase and Nepheline.

Or

(b) Enlist the physical characters of Amethyst and Opal.

14. (a) What is percussion figure? How is it used for classification of Micas?

Or

(b) Draw the double-chain silicate structure and write the composition of unit-cell.

15. (a) Give the mineralogy and composition of Apatite.

Or

(b) Describe the origin of Serpentine.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Attempt a classification of minerals based on their chemical composition.

Or

(b) Account the origin of various polymorphic forms in minerals.

17. (a) Attempt a classification of minerals based on their internal crystal structure.

Or

(b) Explain the structure, composition and origin of Feldspars.

18. (a) Bring out the phenomenon of Solid-solution in Olivine.

Or

(b) What are brittle Mica? Enlist their common characters and describe their origin.

19. (a) Elaborate the common characters of Pneumatolytic minerals.

Or

(b) Enumerate the physical properties of Kyanite and Sillimanite.

20. (a) Explain the parts of a petrological microscope with neat diagram.

Or

(b) Differentiate between optical characters of Isotropic and Anisotropic minerals.

———————

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

Code No. : 11482 E **Sub. Code : JMGE 12/ SMGE 12**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018.

First Semester

Geology — Main

PALEONTOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Fossils are completely absent in rocks belonging to ————————.

   (a) Triassic

   (b) Carboniferous

   (c) Silurian

   (d) Archaean

2. The smallest division in grouping animal kingdom is ————————.

(a) Family (b) Order

(c) Class (d) Phylum

3. The phylum ———————— includes simple and most primitive forms of animals.

(a) Brachiopoda (b) Porifera

(c) Protozoa (d) Coelenterata

4. Meretrix belong to the Class ————————.

(a) Gastropoda (b) Cephlapoda

(c) Pelecypoda (d) Brachiopoda

5. The graptolites are dominant during ———————— period.

(a) Precambrian (b) Devonian

(c) Cretaceous (d) Miocene

6. ———————— holds the bivalves together and is instrumental in opening the shell.

(a) Umbo (b) Hinge

(c) Adductor muscles (d) Ligament

7. The classification of gastropods are largely based on ————————.

(a) operculum (b) retractor muscles

(c) nervous system (d) gill and osphradia

8. ———————— is the extinct cephlapoda.

(a) Nautilus (b) Ammonites

(c) Squids (d) Star fish

9. ———————— are common species belong to the class Pelecypoda.

(a) Alectronya (b) Nautilus

(c) Turritella (d) Murex

10. The head part of a trilobite is called as ————————.

(a) Pygidium (b) Cephalon

(c) Thorax (d) Suture

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write in detail the importance of the study of palacontology.

Or

(b) Write notes of uses of fossils.

12. (a) Discuss classification of foraminifera.

Or

(b) Write notes on geological importance of corals.

13. (a) Draw a neat sketch of an Brachiopod and explain.

Or

(b) Explain the morphological features of productus.

14. (a) Write notes on :

(i) Physa

(ii) Trochus.

Or

(b) Write notes on suture pattern of goniatite.

15. (a) Write notes on :

(i) Olenus

(ii) Calyniene.

Or

(b) Give an account on Stigmatopygus.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe in detail the importance and scope in study palaeontology.

Or

(b) Explain the geological and geographical applications of fossils.

17. (a) Write an essay on forminifera.

Or

(b) Give an account on species belonging to corals.

18. (a) Explain various species belonging to Brachiopoda.

Or

(b) Explain the geological history of pelecypods.

19. (a) Give an account on geological history of gastropods.

Or

(b) Write an essay on extinct group of species of cephlapods.

20. (a) Describe on geological history of trilobite.

Or

(b) Discuss on the morphology of Echinoidea.

———————

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

Code No. : 11490 E **Sub. Code : JMGE 5 B**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018.

Fifth Semester

Geology — Main

Major Elective — PETROLEUM AND COAL GEOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The temperature interval where oil generation is in progress is referred to as

   (a) Liquid window

   (b) Liquid-gas window

   (c) Both (a) and (b)

   (d) None of these

2. Which one of the following is not a principal sources of hydrocarbon gases?

   (a) Methanogenic bacteria

   (b) Kerogens

   (c) Coal

   (d) Fossils

3. The oil and gas traps are known as

   (a) Source rock (b) Reservoir

   (c) Both (a) and (b) (d) None of these

4. Petroliferous basin I category (CAT I Basin) states

   (a) Proven petroliferous basin with commercial production

   (b) Proven petroliferous basin awaiting commercial production

   (c) Both (a) and (b)

   (d) None of these

5. Name of the cola which is having carbon content of 86%–98%.

   (a) Peat (b) Anthracite

   (c) Lignite (d) Bituminous

6. Which one of the following is not the controlling physical parameters of coal?

(a) Moisture (b) Temperature

(c) Volatile content (d) Carbon content

7. TAH stands for

(a) True Along Hole depth

(b) Travel Along Hole depth

(c) Time Along Hole depth

(d) None of these

8. Structural traps are result from a local deformation of

(a) fold only (b) fault only

(c) both (a) and (b) (d) none of these

9. Which one of the following is a tertiary cola field?

(a) Coalfields in West Bengal

(b) Coalfields in Andrapradesh

(c) Coalfields in Maharashtra

(d) Coalfields in Assam

10. Example of fault traps

(a) Dunes (b) Reverse fault

(c) Salt domes (d) None of these

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe the entrapment of hydrocarbons.

Or

(b) Explain the secondary migration of hydrocarbons.

12. (a) Definition of source rocks and their characteristics.

Or

(b) Explain sedimentary basins.

13. (a) Describe the well logging method.

Or

(b) Explain the offshore petroliferous basins of India.

14. (a) Origin and formation of coal.

Or

(b) Explain coal forming plants.

15. (a) Explain the application of coal petrology.

Or

(b) Explain the tertiary coal fields of India.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Origin and migration of natural hydrocarbons.

Or

(b) Explain the entrapment of natural hydrocarbons with neat sketch.

17. (a) Explain salt domes.

Or

(b) Describe the structural traps of oil and gas.

18. (a) Explain the petroleum exploration through well logging method.

Or

(b) Explain the onshore and offshore petroliferous basins of India.

19. (a) Definition, origin and formation of coal.

Or

(b) Explain the fundamentals of coal petrology.

20. (a) Explain the industrial application of coal petrology.

Or

(b) Explain the coalfields of India.

———————

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

Code No. : 11488 E **Sub. Code : JMGE 52**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fifth Semester

Geology — Main

SEDIMENTARY AND METAMORPHIC PETROLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. ———————— is a process by which Olivine is altered to Serpentine during chemical weathering.

   (a) Oxidation

   (b) Solution

   (c) Hydration

   (d) Carbonation

2. The disintegration of fine grained compact rock will generally yield ————————.

   (a) Angular-subangular fragments

   (b) Subrounded-rounded fragments

   (c) Rounded - well rounded fragments

   (d) fragments of all shapes

3. Breccias formed along the planes of movement in the crust is called ———————— breccia.

   (a) Intrafragmental (b) Agglomerate

   (c) Volcanic (d) Crush

4. ———————— is a fairly soluble form of silica in water.

   (a) Opal (b) Agate

   (c) Flint (d) Chert

5. Which one of the following is synonymous with 'load metamorphism?

   (a) Statohydal metamorphism

   (b) Statothermal

   (c) Static metamorphism

   (d) Hypometamorphism

6. The typical structure developed during contact metamorphism of argillaceous rocks is _____.

   (a) Porphyoblastic
   (b) Blastoporphyritic
   (c) Maculose
   (d) Granulose

7. The formation of Hornblende directly from Pyroxene with Epidote and Quartz as by products during dynamo thermal metamorphism is called _____.

   (a) Saussuritisation (b) Analcitisation
   (c) Uralitisation (d) Sericitisation

8. Pick the odd one out

   (a) Pyroxene gneiss
   (b) Pyroxene granulite
   (c) Leptynite
   (d) Leptite

9. Which one of the following minerals is NOT a constituent of Greisen?

   (a) Microcline (b) Quartz
   (c) Topaz (d) Muscovite

10. The process of partial melting of country rocks by invaded maga is called ————————.
    (a) Anatexis
    (b) Palingenesis
    (c) Metamorphic differentiation
    (d) Assimilation

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. Write notes on :
    (a) Classification of sedimentary rocks.

Or

    (b) Lithification and Diagenesis.

12. (a) What is sandstone? Explain briefly its types.

Or

    (b) Comment on the texture and composition of rudaceous rocks.

13. (a) Explain briefly the Eskola's classification of metamorphic facies.

Or

    (b) Define grade of metamorphism. Discuss briefly its change during thermal metamorphism of shale.

14. (a) Explain the processes and minerals formed during thermal metamorphism of pure and impure limestone.

Or

(b) Describe shortly the products of cataclastic metamorphism.

15. Write notes on :

(a) Granitisation

Or

(b) Pnuematolysis.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe in detail with neat sketches various structures found in sedimentary rocks.

Or

(b) Define texture. Explain its types seen in sedimentary rocks.

17. Give an account on sedimentary deposits of

(a) Chemical origin

Or

(b) Residual origin.

18. Write elaborate notes on :

(a) (i) Role of metamorphic agents during metamorphism

(ii) Oriented metamorphic textures.

Or

(b) What is zone of metamorphism? Explain various zones of metamorphism with respect to different physicochemical conditions and associated mineral formation.

19. Explain in detail the effect of :

(a) Dynamo thermal metamorphism in argillaceous rocks.

Or

(b) (i) Dynamic metamorphism in arenaceous sediments.

(ii) Dynamo thermal metamorphism in quartzo feldspathic rocks.

20. Write descriptive notes on :

(a) (i) Charnockite

(ii) Eclogite

Or

(b) (i) Anatexis and Palingenesis

(ii) Injection metamorphism.

———————

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

Code No. : 11483 E **Sub. Code : JMGE21/ SMGE 21**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018

Second Semester

Geology – Main

STRATIGRAPHY AND INDIAN GEOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who is the father of stratigraphy
   (a) James Hutton
   (b) William Smith
   (c) John Lehman
   (d) Charles Lyell

2. The mappable assemblages of strata are called

   (a) Time unit

   (b) Rock units

   (c) Time rock units

   (d) None of the above

3. Which is oldest among the Cuddapah system?

   (a) Papaghani series

   (b) Nallamalai series

   (c) Cheyair series

   (d) Kistna series

4. There are no formations in peninsular India between Vindhyan and the period of glaciations in the upper carboniferous

   (a) True

   (b) True but not correct reason

   (c) Falls

   (d) None of these

5. The lower and upper parts of the Delhi Supergroup are separated from each other by an intervening succession known as

   (a) Pialo series

   (b) Susnai breccia

   (c) Kushalgargh limestone

   (d) Hornstone breccia

6. The rocks belonging to Gondwanas are of

   (a) Fluviatile origin

   (b) Lacustrine origin

   (c) Marine origin

   (d) Glacial origin

7. The equivalents of the Taichir tillites in the Kashmir Hazara area are known as

   (a) Mandhali beds

   (b) Blaini beds

   (c) Tannaki beds

   (d) Umia beds

8. Age of Deccan traps is

   (a) L.Eocene —up Cretaceous

   (b) Mid Cretaceous

   (c) Carboniferous

   (d) Eocene

9. The physiographic features of India were shaped during

(a) Proterozoic (b) Paleozoic

(c) Mesozoic (d) Cenozoic

10. Age of Cuddalore Sand stone is

(a) Mio-Pliocene

(b) Miocene

(c) Oligocene-Miocene

(d) Eocene

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write a note on principles of Stratigraphy.

Or

(b) Describe briefly geological time scale.

12. (a) Give a note on lower vidhyan.

Or

(b) State the structure of Kurnool system.

13. (a) Give a note on age of Saline series.

Or

(b) Write a note on Umaria series.

14. (a) Write a detailed account on Cretaceous of Trichinopoly.

Or

(b) Briefly explain Triassic of Spiti.

15. (a) Write a note on Warkala Sandstone.

Or

(b) Short note on Karewa formations.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Elucidate the laws of Stratigraphy.

Or

(b) Write an essay on Physiographic divisions of India. Add a note on major river distributions in India.

17. (a) Write the stratigraphic distribution, geological succession, structure and tectonics of Archaean system.

Or

(b) Explain in detail the stratigraphic distribution, geological succession and economic importance of Cuddapah system.

18. (a) Discuss in detail the Palaeozoic formations of Salt Range.

Or

(b) Write an essay on the structure and climatic conditions with respect to Gondwana formations of Tamil Nadu.

19. (a) Describe briefly the stratigraphic succession of Jurassic systems.

Or

(b) Write an essay on the petrology and petrographic characteristics of the rocks of Deccan Traps.

20. (a) Explain in detail the stratigraphic distribution, geological succession and economic importance of Siwalik system.

Or

(b) Write an essay on rise of Himalayas.

———————

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

Code No. : 11485 E **Sub. Code : JMGE 31**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Third Semester

Geology — Main

STRUCTURAL GEOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The trend of the outcrop of a rock is called

   (a) dip

   (b) strike

   (c) apparent dip

   (d) hinge

2. Dip direction is alway ———————— to strike direction.

(a) Vertical (b) Perpendicular

(c) Horizontal (d) None of these

3. Folds are formed by

(a) Torsional force

(b) Relative forces

(c) Compressive forces

(d) None of these

4. When a competent bed slides past an incompetent bed, a fold is formed which is called as

(a) homocline (b) tight fold

(c) drag fold (d) none of these

5. The component of the net slip measured parallel to dip of the fault plane is called

(a) rake (b) dip slip

(c) net slip (d) none of these

6. Faults are formed by

   (a) Compressive forces

   (b) Torsional forces

   (c) Relative force

   (d) None of these

7. Columnar joints occur in

   (a) Granite (b) Charnochite

   (c) Basalt (d) None of these

8. Joints perpendicular to the axes of folds are

   (a) Release joint (b) Extension joints

   (c) Shear joints (d) None of these

9. The sample collected in equal interval of same bed in subsurface is called as

   (a) Channel sampling

   (b) Surface sampling

   (c) Cure sampling

   (d) None of these

10. The instrument used to measure dip and strike of the outcrop is called as

(a) Clinometer (b) Altimeter

(c) Ph. meter (d) None of these

PART B — (5 × 5 = 25 marks)

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

Answer should not exceed 250 words.

11. (a) Give a note on contour lines.

Or

(b) Write note on 'V' Rules.

12. (a) Write a note on Brunton Compass.

Or

(b) Explain parts of fold.

13. (a) What is footwall and Hanging Wall?

Or

(b) Give a note on overlap and offlap.

14. (a) Write note on Horst and Graben.

Or

(b) Describe Parallel unconformity.

15. (a) How do you collect the samples from outcrop?

Or

(b) Describe channel sampling.

PART C — (5 × 8 = 40 marks)

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

Answer should not exceed 600 words.

16. (a) Write an essay on topographic features.

Or

(b) Write an essay on true and vertical thickness of the formations.

17. (a) Write detaily about the classification of folds.

Or

(b) Explain the mechanics of folding.

18. (a) Explain the classification of joints.

Or

(b) Describe the various types of unconformities.

19. (a) Write an essay on classification faults.

Or

(b) Write an essay on geometry of faults.

20. (a) How do you prepare geological report?

Or

(b) Explain the sampling methods.

———————

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

Code No. : 11642 E **Sub. Code : SMGE 31**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Third Semester

Geology – Main

STRUCTURAL GEOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A ———— of a function of two variables is a curve along which the fraction has a constant value, so that the curve joints points of equal value.

   (a) Contour line

   (b) Stratum contours

   (c) Attitude of beds

   (d) V-rules

2. True dip value is

   (a) lesser than the apparent dip value

   (b) equal to the apparent dip value

   (c) greater than the apparent dip value

   (d) not related to the apparent dip value

3. The attitude of folds and fold systems is or can be fully characterized by

   (a) Strike, dip and dip direction of axial plane surface

   (b) The pole to bedding plotted on a stereonet canvas

   (c) The plunge and plunge direction of the fold axis

   (d) (a) and (c) together

4. The Brunton Compass instrument was patented in ———— by a Canadia – born colorado geologist named David W. Brunton.

   (a) 1888 (b) 1894

   (c) 1882 (d) 1900

5. Which fold has got two hinges?

   (a) Fan fold (b) Conjugate fold

   (c) Isoclinal fold (d) Box fold

6. When younger beds completely cover up the underlying rocks resulted structure is known as

   (a) Overstep (b) Overlap

   (c) Offlap (d) Onlap

7. A fault with zero strike slope component

   (a) strike slip fault (b) dip slip fault

   (c) strike fault (d) dip fault

8. Slip is generally observed in

   (a) Folds (b) Joints

   (c) Faults (d) Unconformities

9. Ductile shear zones developed at

   (a) temperature > 250°C

   (b) temperature < 250°C

   (c) temperature > 350°C

   (d) temperature < 35°C

10. Data received from various agencies for interpretations

    (a) Primary data (b) Secondary data

    (c) Tertiary data (d) Irregular data

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Give a note on Definition and scope of structural geology.

Or

(b) Explain 'V' rule.

12. (a) Explain the parts of Clinometer.

Or

(b) Write notes on Mechanism of folds.

13. (a) Briefly explain the Inlier and Outlier.

Or

(b) Write a note on Nappe and Klippe.

14. (a) Write an essay on classification of fault.

Or

(b) Write notes on Mechanism of fault.

15. (a) Write an essay on Foliation.

Or

(b) Describe the importance of stratigraphy in geological report.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe with neat sketches, write a brief note on the following :

(i) True Thickness

(ii) Vertical Thickness.

Or

(b) Enumerate the features and use of topographic map.

17. (a) Write an essay on fold.

Or

(b) Write an essay on Brunton Compass with neat sketches.

18. (a) Describe in detail the various criteria for the recognition of unconformities of beds in the field and Laboratory.

Or

(b) Write an essay on geometric and genetic classification of joints.

19. (a) Describe the classification of fault.

Or

(b) Discuss in detail the various criteria used for the recognition of fault in the field.

20. (a) Describe the preparation of geological report.

Or

(b) Write an essay on different methods of sampling.

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