

**Master of Science – I (Applied Geology) Examination: Oct/Nov 2016
Semester – I (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 33	Monday 21/11/2016	10.30 AM to 01.00 PM	Sedimentology and Palaeontology	HCT 1.3	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Select the answer among the following:

14

- 1) A river channel widens downstream because the
 - a) Sediment load decreases
 - b) Gradient decreases and discharge increase
 - c) Lateral eroding capacity of the river increases and sediment load decreases.
 - d) Competence of the river increases.

- 2) Which one of the following is a biochemical sedimentary rock?
 - a) Arkose
 - b) Coal
 - c) Shale
 - d) Conglomerate

- 3) The ----- was an era dominated by the dinosaurs.
 - a) Precambrian
 - b) Paleozoic
 - c) Mesozoic
 - d) Cenozoic

- 4) Fossils are most common in ----- rock types.
 - a) Sedimentary
 - b) Igneous
 - c) Metamorphic
 - d) All the above

- 5) A sedimentary rock composed of angular particles of gravel is called.
 - a) Breccias
 - b) Conglomerate
 - c) Sandstone
 - d) Gravelstone

- 6) Micrite can be generated by:
 - a) Chemical precipitation
 - b) Disaggregation of peloids
 - c) Micritization
 - d) All of the above

- 7) Glossopteris is a genus of sub- class -----
 - a) Pteridospermae
 - b) Cycadophyta
 - c) Coniferophyta
 - d) Angeiospermae

- 8) Benthonic foraminiferas were distributed all over the world during the:
 - a) Paleozoic era
 - b) Mesozoic era
 - c) Tertiary era
 - d) Cenozoic era

- 9) In comparison with normal river flow, debris flows can easily carry large boulders because of higher:
- a) Velocity of flow
 - b) Volume of flow
 - c) Turbulence of flow
 - d) Viscosity of flow
- 10) Conglomerate and breccia are examples of
- a) Arenaceous
 - b) Argillaceous
 - c) Rudaceous
 - d) Ferruginous rocks
- 11) Paradoxide is genus which possess ----- type facial suture.
- a) Hypoparian
 - b) Proparian
 - c) Opisthoparian
 - d) Gonatoparian
- 12) Dianosaurs extincted at
- a) Permian-Triassic boundary
 - b) Cretaceous-Tertiary boundary
 - c) Ordovician- Silurian boundary
 - d) Devonian carboniferous boundary
- 13) Gondwana basin is an example of
- a) Rift basin
 - b) Pullapart basin
 - c) Down warp basin
 - d) Interior basin
- 14) Osteichthyses are
- a) Cartilaginous fishes
 - b) Bony fishes
 - c) Both A and B
 - d) None of the above

SECTION – A

- Q.2** What is meant by sedimentary environment? Give an account on sedimentation in deltaic environment? 14
- Q.3** Give an account on the sedimentary basins in India and their tectonic setting. 14
- Q.4** What are fossils? Give an account on modes of preservation of fossils. 14

SECTION-B

- Q.5 Write short notes on the following** 14
- A) Morphology of trilobite
 - B) Classification of limestone
- Q.6 Write in brief:** 14
- A) Texture of sedimentary rocks
 - B) Gondwana flora
- Q.7 Discuss in short of the following** 14
- A) Lithification and diagenesis
 - B) Morphology of foraminifera

**Master of Science – I (Applied Geology) Examination: Oct/Nov 2016
Semester – I (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 34	Wednesday 23/11/2016	10.30 AM to 01.00 PM	Economic Geology	SCT 1.1	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Fill in the blanks with correct choice.

14

- 1) ----- is primary ore of zinc.

a) Chalcopurite	b) Hematite
c) Galena	d) Sphalerite

- 2) ----- deposits consists of minerals crystallizing from a magma towards the close of magmatic period.

a) Early magmatic	b) Late magmatic
c) Metasomatic	d) Pegmatitic

- 3) Hutti is famous for ----- mine.

a) Gold	b) Copper
c) Zinc	d) Iron

- 4) Bauxite deposits of Maharashtra are associated with -----

a) Granite	b) Dunite
c) Amphibolites	d) Basalt

- 5) Ore bearing fluid trapped in sediments at the time they were deposited is known as -----

a) Meteoric water	b) Juvenile water
c) Connate water	d) Spring water

- 6) Ladder vein structure commonly is shown by ----- deposits.

a) Sedimentary	b) Cavity filled
c) Evaporites	d) Magmatic Segregation

- 7) Banded manganese ores are generally -----

a) Epigenetic	b) Syngenetic
c) Both a and b	d) None

- 8) Which one of the following ore mineral is lead mineral?

a) Pyrite	b) Malachite
c) Azurite	d) Galena

- 9) The pyrosomatic deposits are formed by -----
 a) Metamorphic process b) Residual alteration
 c) Contact metasomatism d) Pneumatolytic alteration
- 10) Diamonds in kimberlite are good example of -----
 a) Disseminated deposits b) Segregated deposits
 c) Injected deposits d) Pegmatitic deposits
- 11) Magmatic magnetic deposits occur with
 a) Diorite b) Syenite
 c) Pegmatite d) High viscosity
- 12) Iron is commonly precipitated as -----
 a) Siderite b) Limonite
 c) Hematite d) All above
- 13) "Gossans" is a -----
 a) Ferruginous residue b) Siliceous residue
 c) Calcareous residue d) Organic residue
- 14) The mineral sphalerite shows ----- colour of internal reflection under reflected light.
 a) Yellow to Brown b) Blue
 c) Green d) Deep Brown

- Q.2** Describe in detail khetri deposits of India. **14**
- Q.3** What is hydrothermal deposit? Explain in detail cavity filling deposit. **14**
- Q.4** Write full notes on supergene sulphide enrichment. **14**
- Q.5 Write short notes on the following** **14**
 A) Ore Texture
 B) Optical properties of ore minerals
- Q.6 Discuss the short** **14**
 A) National mineral policy
 B) Fluid inclusion
- Q.7 Write in brief :** **14**
 A) Controls one ore deposits
 B) Metallogenic province & Epotict

Master of Science – I (Applied Geology) Examination: Oct / Nov 2016
Semester – I (Old CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 36	Wednesday 16/11/2016	10.30 AM to 01.00 PM	Mineralogy and Optics	I	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q. 2, 3 & 4
 - 5) Attempt any two from Q. 5, 6 & 7

Total Marks:70

Q.1 Choose the correct answer.

14

- 1) Cleavage is a ----- property.
 - a) Non-directional and non-diagnostic
 - b) Directional and diagnostic
 - c) Non-directional and diagnostic
 - d) Directional and non diagnostic

- 2) Ring silicate structures are characteristic of minerals crystallizing in
 - a) Hexagonal system
 - b) Hexagonal and trigonal system
 - c) Hexagonal tetragonal and orthorhombic system
 - d) Hexagonal, orthorhombic and monoclinic system

- 3) Nepheline is a ----- group of mineral
 - a) Feldspar
 - b) feldspathoid
 - c) Olivine
 - d) quartz

- 4) Which one among the following is a isometric mineral.
 - a) Feldspar
 - b) Olivine
 - c) garnet
 - d) muscovite

- 5) The main difference between graphite and diamond is
 - a) Composition
 - b) hardness
 - c) density
 - d) crystal structure

- 6) The purest and the most transparent form of quartz is
 - a) milky quartz
 - b) rose quartz
 - c) rock crystal
 - d) aventurine

- 7) The end member of an olivine series is
 - a) forsterite
 - b) fayalite
 - c) orthoferrosilite
 - d) augite

- 8) The refractive index of the Canada balsam is
 - a) 1.50
 - b) 1.54
 - c) 1.486
 - d) 1.65

- 9) Which of the following is used for the identification of polished sections of metallic ores?
- a) Compound microscope b) Polarizing microscope
c) reflecting microscope d) binocular microscope
- 10) The 'Melatope' of an interference figure coincides with
- a) The point of emergence of the optic axis
b) Direction perpendicular to the optic axis
c) Direction 45 to the optic axis
d) None of the above
- 11) The purple colour of amethyst is due to the presence of
- a) titanium b) manganese
c) iron d) chromium
- 12) Hardness of minerals increases with a/an
- a) increase in valency
b) increase in bond strength
c) increase in the density of packing of atoms
d) all of the above
- 13) On Moh's scale of hardness ----- possess hardness 4.
- a) calcite b) apatite
c) fluorite d) feldspar
- 14) When anions and cations of similar size and in same numbers crystallizes in similar type of structure , the phenomenon is known as
- a) isomorphism b) polymorphism
c) diadochy d) eutectic crystallization

- Q.2** Discuss structure, chemistry, optical properties and paragenesis of Alkali feldspar group. **14**
- Q.3** Write a full note on interference figure of biaxial and uniaxial mineral. **14**
- Q.4** Write in detail different types of silicate structure. **14**
- Q.5 Write short notes on the following** **14**
A) Polysynthetic twinning
B) Optical & physical properties of olivine mineral
- Q.6 Explain briefly the following:** **14**
A) Pleochroism
B) Concept of light under microscope
- Q.7 Attempt the following:** **14**
A) Polymorphism & Isomorphism
B) Optical properties of garnet

**Master of Science – I (Applied Geology) Examination: Oct / Nov
2016 Semester – I (Old CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 37	Friday 18/11/2016	10.30 AM to 01.00 PM	Igneous and Metamorphic Petrology	II	

- Instructions:**
- 1) Answer five questions
 - 2) All questions carry equal marks
 - 3) Question no. 1 is compulsory
 - 4) Answer any two questions from Q. No. 2, 3, 4
 - 5) Attempt any two questions from Q. No. 5, 6, 7
 - 6) Draw neat and labeled diagrams where necessary

Total Marks: 70

Q.1 Choose correct answer for the following

14

- 1) The presence of omphacite – garnet in the metamorphic rock is indicative of
 - a) Greenschist facies
 - b) Greenstone
 - c) Granulite grade
 - d) Eclogite facies
- 2) Khondalite of Eastern Ghats belong to
 - a) Zeolite facies
 - b) Amphibolite facies
 - c) Blue schist facies
 - d) None
- 3) The index mineral ‘Stilpnomelane’ is for which facies
 - a) Eclogite
 - b) Greenschist
 - c) Hornfels
 - d) Buchite
- 4) Find the odd pair from the following
 - a) Hampi temple – closepet granite
 - b) Taj Mahal – Makrana marble
 - c) Naldurg – Basalts
 - d) Gate way of India – Gabbro
- 5) The concept of metamorphic facies was first proposed by
 - a) Harker
 - b) Bowen
 - c) Eskola
 - d) Turner
- 6) Which of the following rocks has hypersthene as characteristic mineral
 - a) Charnockite
 - b) Hornfels
 - c) Carbonatites
 - d) Blue – schist
- 7) Sieve structure is noticed in the rocks of
 - a) Blue schist facies
 - b) Eclogite facies
 - c) Hornfels facies
 - d) None
- 8) The line joining equal degree of metamorphism is synonymous to
 - a) isograde
 - b) isotope
 - c) isotype
 - d) isobar

- 9) The world famous diamond deposits located in Republic of South Africa are associated with
- | | |
|-------------|---------------|
| a) eclogite | b) kimberlite |
| c) granite | d) none |
- 10) The silica percentage in basic igneous rocks is
- | | |
|--------------|--------------|
| a) >66% | b) 45% - 62% |
| c) 52% - 66% | d) < 45% |
- 11) Igneous rocks exhibiting anhedral minerals in equal size are
- | | |
|-------------------|-------------------|
| a) Allotromorphic | b) Hypidiomorphic |
| c) Panidiomorphic | d) None |
- 12) The generation of calc – alkaline magmas are at
- | | |
|---------------------|---------------------|
| a) Aceanic rift | b) Sub duction zone |
| c) Continental rift | d) None |
- 13) Find the odd one out
- | | |
|----------------|-------------|
| a) Eclogite | b) Andesite |
| c) Amphibolite | d) Marble |
- 14) The MORB are characterized by basalts of
- | | |
|-------------|------------------|
| a) Tholeite | b) Carbonatite |
| c) Alkaline | d) All the above |

Q.2 Describe the role of water vapour pressure in the crystallization of albite – orthoclase system and state its significance

Q.3 Discuss khondalite and charnockite rocks of eastern ghats. Add a note on mineralogy of them with suitable ACF diagrams.

Q.4 Describe how calc – alkaline magmatism originates with respect to plate boundaries and also the metamorphism associated with convergent plate margins

Q.5 Write short note on the following

- A) Barrowian zones of metamorphism
- B) Fenitization

Q.6 Bring out the salient aspects on the following

- A) S – type and I – type granite
- B) Burial metamorphism

Q.7 Write briefly on the following

- A) Deccan basalts
- B) Index minerals for metamorphic facies

**Master of Science – I (Applied Geology) Examination: Oct/Nov 2016
Semester – I (Old CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 38	Monday 21/11/2016	10.30 AM to 01.00 PM	Sedimentology and Palaeontology	III	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Select the answer among the following:

14

- 1) The foraminifera belong to the class
 - a) sarcodina
 - b) sporozoa
 - c) flagellata
 - d) mastigophora

- 2) The lateral and posterior borders of trilobites meet to form an angle known as
 - a) glabellar angle
 - b) genal angle
 - c) spire angle
 - d) angle of divergence

- 3) As compared with sandstone , shales have
 - a) Higher porosity and permeability
 - b) Lower porosity and permeability
 - c) Higher porosity and lower permeability
 - d) Lower porosity and higher permeability

- 4) ‘Levee’ and ‘Crevasse’ splay deposits are
 - a) channel deposits
 - b) channel- fill deposits
 - c) river bank deposits
 - d) flood basin deposits

- 5) The central convex lobe of the cephalon of trilobites is known as
 - a) Glabella
 - b) Occipital furrow
 - c) Free cheek
 - d) Neck, furrow

- 6) The shells of foraminifers are made up of
 - a) Calcium carbonate
 - b) Arenaceous sediments
 - c) Chitin
 - d) Any of the above

- 7) The Rann of Kutch is an example of
 - a) Non-marine evaporate basin
 - b) Marine evaporate basin
 - c) Ephemeral evaporate lakes
 - d) Playa

- 8) A sedimentary facies may be described in terms of
 - a) Lithologic characteristics only
 - b) Palaeontologic characteristics only
 - c) Both lithologic and palaeontologic characteristics
 - d) None of the above

**Master of Science – I (Applied Geology) Examination: Oct / Nov
2016 Semester – II (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE - 40	Thursday 17/11/2016	10.30 AM to 01.00 PM	Economic Geology	V	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Choose correct alternative among the following:

14

- 1) The well known chromite deposits occur in
 - a) Ultramafic rocks
 - b) Acidic rocks
 - c) Sedimentary rocks
 - d) None of the above

- 2) The main source of diamonds is Kurnool formation is from
 - a) Banganpalli conglomerate
 - b) Paniam sandstones
 - c) Jamalamadugu kimberlites
 - d) Panna sandstone

- 3) Placer deposits are formed as a result of _____
 - a) Liquid segregation
 - b) Mechanical concentration
 - c) Metasomatic replacement
 - d) Supergene sulphide enrichment

- 4) Malachite is hydroxyl carbonate of _____
 - a) Zinc
 - b) Copper
 - c) Iron
 - d) Lead

- 5) In Maharashtra chromite ore occurrence is known from
 - a) Kankauli-Vagda
 - b) Kolaba
 - c) Randhanagari
 - d) None of the above

- 6) Which of the following represent magmatic dissemination?
 - a) Chromite in ultramafics
 - b) Diamonds in kimberlite
 - c) Asbestos in serpentine
 - d) None of the above

- 7) The manganese deposits of Maharashtra lie in Nagpur and Bhandara districts are of
 - a) Gondite
 - b) Charnockite
 - c) Kodurite
 - d) Khondalite

- 8) Chromite deposits of Sitampundi are associated with
 - a) Anorthosite
 - b) Peridotite
 - c) Syenite
 - d) All the above

- 9) Malanjkhand is famous for biggest open cast mine of India of
 - a) Sponge iron
 - b) Lignite
 - c) Uranium
 - d) Copper

Master of Science – I (Applied Geology)
Examination: Oct / Nov 2016 Semester – II (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 41	Saturday 19/11/2016	10:30 A.M to 01:00 P.M	Indian Stratigraphy	VI	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Tick mark the correct answer; 14

- 1) The rocks of Chitradurga Group shows -----
 - a) Zeolite facies
 - b) Amphibolites facies
 - c) Greenschist facies
 - d) Granulite facies

- 2) Bairenkonda formation belongs to -----
 - a) Kurnool group
 - b) Nallamalai group
 - c) Papaghni group
 - d) Cheyyair group

- 3) Closepet granites from South India equivalent with ----- of central India.
 - a) Mayurbhanj Granite
 - b) Bundelkhand Gneiss
 - c) Singhbhum Granite
 - d) Dongargarh Granite

- 4) Indo- Gangetic basin is also known as:
 - a) Periferal backland basin
 - b) Peripheral foreland basin
 - c) Dominal basin
 - d) Erosional basin

- 5) Which formation of Saucer group is more important for manganese ore:
 - a) Sitasaong formation
 - b) Lohangi formation
 - c) Mansar formation
 - d) Chorbaoli formation

- 6) Dinosaurs existed during:
 - a) Palaeozoic era
 - b) Mesozoic era
 - c) Tertiary era
 - d) All the above are correct

- 7) The lowermost formation of Siwalik Group is -----
 - a) Kamliyal Formation
 - b) Dhokpathan Formation
 - c) Pinjor Formation
 - d) Nagri Formation

- 8) What is the age of Deccan Trap
 - a) Upper Creataceous- Lower Eocene
 - b) Lower creataceous-Upper Eocene
 - c) Palaeocene- Lower Eocene
 - d) Cambrian to recent

- 9) On Which basement the sediments of Dharwar Supergroup were laid over -----
- a) Marble & Conglomerate b) Phyllite & Slaptas
c) Quartzite & Limestone d) Sargur Schist & peninsular Gneisses
- 10) On which of the following supergroup/group the Diamond are associated with ---
- a) Vindyan supergroup b) Sausar group
c) Dongargarh group d) Sakoli group
- 11) Who introduce the neme 'Gondwana'-----
- a) Medlikott b) Heron
c) King d) Wadia
- 12) Which of the following is younger mountain chain
- a) Andes b) Himalayas
c) Alps d) Zagros
- 13) What is the correct sequence in ascending order -----
- a) Semri, kaimur, Rewah, b) Kaimur, Rewah, Semri, Bhander Bhander
c) Semri, Bhander, Kaimur, d) Bhander semri, kaimur, Rewah Rewah
- 14) Beginning of Gondwana Sedimentation in India is characterized by the deposition of ----- sediments.
- a) Marine sediments b) Terrestrial Sediments
c) Glacial Sediments d) All the above

- Q.2** Write an essay on Deccan trap. **14**
- Q.3** Discuss in detail Structure, Stratigraphy & Tectonic evolution of Cuddapah Basin. **14**
- Q.4** Give details about the classification, climatic condition and environment of deposition of Gondwana rocks. **14**
- Q.5** **Write short notes on the following** **14**
A) Peninsular Gneissic Complex
B) Indravati Basin
- Q.6** **Describe in brief:** **14**
A) Triassic sequence in spiti
B) Fossils of Siwalik
- Q.7** **Discuss in short of the following** **14**
A) Creataceous of Tiruchirapalli
B) Jurassic of Kutch

**Master of Science – II (Applied Geology) Examination:
Oct / Nov 2016 Semester – III (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 48	Wednesday 16/11/2016	2:30 P.M to 5:00 P.M	Geotectonics and Physical Oceanography	IX	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two essay questions from Q.2, 3 & 4
 - 5) Attempt any two short note question from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Fill in the blanks:

14

- 1) The Ninety east ridge located in -----
 - a) Arabian sea
 - b) Off coast of Pakistan
 - c) Persian gulf
 - d) Bay of Bengal
- 2) Compressive stresses, granitic magmas and intermediate depth earthquakes are associated with -----
 - a) Subduction zones
 - b) Continent- continent convergence
 - c) Spreading centers
 - d) Transform boundaries
- 3) Melange deposits are associated with -----
 - a) Divergent boundaries
 - b) Subduction margins
 - c) Transform boundaries
 - d) All of these
- 4) The effect of the earth's rotation is to deflect moving objects to the right in the northern hemisphere and to the left in the southern hemisphere is referred as ---
 - a) Coriolis effect
 - b) Geostrophic current
 - c) Ekman transport
 - d) None of the above
- 5) Which plate is being subducted beneath western south America?
 - a) The Pacific plate
 - b) The South American plate
 - c) The Nazca plate
 - d) The South Atlantic plate
- 6) The carbonate compensation depth in ocean is at depth of -----
 - a) 2500 m
 - b) 4500 m
 - c) 1200m
 - d) 100m
- 7) Which of the following increase with distance from a mid-ocean ridge?
 - a) The age of Oceanic lithosphere
 - b) The depth to the seafloor
 - c) The thickness of the lithosphere
 - d) All of the above
- 8) What are ophiolite suites?
 - a) Fragments of ocean lithosphere emplaced on a continent
 - b) Groups of sea floor magnetic anomalies
 - c) Wedge shaped packages of sediments that form at passive margins
 - d) Micro continents that have provided a long distance
- 9) When the estuary is essentially tidless and the floor of the estuary slopes down towards the sea.
 - a) Partially mixed estuary
 - b) Salt wedge estuary
 - c) Stratified estuary
 - d) None of the above

- 10) At the convergent plate boundary the most common geologic features formed on the continental lithosphere are -----
- | | |
|-----------------|---------------------|
| a) Island are | b) Pull apart basin |
| c) Volcanic are | d) Rift valleys |
- 11) Lesser Himalaya domain in Himalaya is separated from great Himalaya by -----
- | | |
|----------------------------|-------------------------|
| a) Main central thrust | b) Main Boundary thrust |
| c) Himalayan frontal fault | d) Indus suture zone |
- 12) The margin associated with a trench, volcanism, active mountains and earth quakes.
- | | |
|-------------------|------------------|
| a) Pacific type | b) Atlantic type |
| c) Transform type | d) None |
- 13) Earth loses heat by
- | | |
|---------------|---------------------|
| a) Conduction | b) Convection |
| c) Radiation | d) All of the above |
- 14) Which type of magma is generated at mid oceanic ridge.
- | | |
|---------------------|------------------------|
| a) Andesitic magma | b) Calc-alkaline magma |
| c) Tholeiitic magma | d) Acidic magma |

Q.2 Describe in brief the volcanism and seismicity related to plate boundaries.

Q.3 Explain in detail the surface and deep circulation pattern of oceanic water.

Q.4 Write note on topographic features of ocean basin.

Q.5 Write short notes on the following

- A) Sea floor spreading
- B) Earth interior and its composition

Q.6 Explain the following

- A) Petrology of ocean crust
- B) Oceanic sediments

Q.7 Discuss the following

- A) Hydrothermal vents and its significance
- B) Sea level changes

Master of Science – II (Applied Geology)
Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 49	Friday 18/11/2016	02:30 P.M to 05:00 P.M	Mineral Exploration	X	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4.
 - 5) Attempt any two from Q.5, 6 & 7.
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Tick the correct choice of the following:

- 1) In resistivity survey of 3 layers the relationship of each of the layers with other is as $P_1 > P_2 < P_3$ than the curve type is
 - a) A type
 - b) K type
 - c) H type
 - d) D type
- 2) In geochemical prospecting which is the term used to define the upper limit of background fluctuations.
 - a) Median
 - b) Threshold
 - c) Standard deviation
 - d) All
- 3) Which of the following correction is not applied to gravity data?
 - a) Free air correction
 - b) Diurnal correction
 - c) Elevation correction
 - d) Baugner correction
- 4) Pathfinder element for porphyry copper deposit is
 - a) No
 - b) Se
 - c) Hg
 - d) None of the above
- 5) Geiger muller counter is used to detect.
 - a) Radioactivity
 - b) Resistivity
 - c) Seismicity
 - d) None
- 6) Khondalite occurring in the eastern ghats are associated with
 - a) Gold
 - b) Diamonds
 - c) Zinc
 - d) Graphite
- 7) Which of the following methods used for location of sub surface structures in hydrocarbon prospecting.
 - a) Gravity
 - b) Magnetic
 - c) Seismic
 - d) Electro magnetic

Master of Science – II (Applied Geology)
Examination: Oct/Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE– 50	Monday 21/11/2016	02:30 P.M to 05:00 P.M	Engineering Geology and Mining Geology	XI	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Select the answer among the following:

14

- 1) The central portion of the dam that directly overlies on the channel is known as
 - a) Crest
 - b) Heel
 - c) Axis of dam
 - d) Driver section
- 2) The concrete walls on either side of spillway (way chute) is known as
 - a) Key wall
 - b) Training wall
 - c) Protecting wall
 - d) Side wall
- 3) Highest crushing strength is of ----- rock.
 - a) Limestone
 - b) Marble
 - c) Dolerite
 - d) Shale
- 4) Opening through the dam through which checking and repair is done is
 - a) Conduit
 - b) Inspection chamber
 - c) Gallery
 - d) Silt
- 5) The upstream portion of the dam where it conducts the bearing surface is known as -----
 - a) Toe
 - b) Abutment
 - c) Axis of dam
 - d) Heel
- 6) In folded rocks the tunnel may be excavated along the trend of -----
 - a) Fault plane
 - b) Fold axis
 - c) Bedding plane
 - d) None of the above
- 7) Land slide occurs when the angle of slope is greater than the angle of -----
 - a) Fault plane
 - b) Dip and strike
 - c) Rest
 - d) Fold axis
- 8) Which method is good for mechanical placer mining?
 - a) Auger method
 - b) Diamond drilling
 - c) Quarrying
 - d) Planning

Master of Science – II (Applied Geology)
Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 51	Wednesday 23/11/2016	02:30 P.M to 05:00 P.M	Fuel Geology and Resource Management	XII	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Select the answer among the following: **14**

- 1) What type of energy is derived from heated ground water-----
 - a) Solar energy
 - b) Geothermal energy
 - c) Nuclear energy
 - d) Hydro electric energy

- 2) The minimum temp. required for formation of petroleum in the basin is ----- temp.
 - a) Diagenetic
 - b) Metagenetic
 - c) Maturation
 - d) Ketagenic

- 3) Coal occurs commonly in ----- rocks.
 - a) Basinal
 - b) Igneous
 - c) Metamorphic
 - d) Mylonitic

- 4) The constituents which make coal are termed as -----
 - a) Mineral
 - b) Maceral
 - c) Gems
 - d) Clays

- 5) Which one of the following is renewable resources -----
 - a) Coal
 - b) Hydrocarbon
 - c) Radioactive
 - d) Tidal

- 6) The origin of petroleum is advocated from ----- source.
 - a) Extra-terrestrial
 - b) Mantle
 - c) Intrusion
 - d) Sedimentary basin

- 7) Quality of oil is measured by API degree ----- of oil.
 - a) Viscosity
 - b) Density
 - c) Gravity
 - d) Fugacity

- 8) Migration of petroleum from the cap rock to atmosphere through soil cover is termed as -----
 - a) Primary
 - b) Secondary
 - c) Tertiary
 - d) None of the above

- 9) Cambay basin falls in ----- state.
 e) Maharashtra f) Gujarat
 g) Rajasthan h) Goa
- 10) Which one of the following is not a stratigraphic trap.
 a) Unconformity b) Ancient shoreline
 c) Overlap d) Anticline
- 11) Which one of the following is productive basin
 a) Bhima b) Cuddapah
 c) Bombay d) Kareuva
- 12) Chemical composition of coal is obtained by ----- analysis.
 a) Gravimetric b) Proximate
 c) Trimetric d) Spectrometric
- 13) Conventional fuel used in India is -----
 a) Forest wood b) Coal
 c) Petrol d) Diesel
- 14) A process of formation of oil begins at ----- stage.
 a) Deposition b) Diagenesis
 c) Maturation d) Metagenesis

- Q.2** Write an essay on Geo-thermal energy and India's potential in Geothermal energy. **14**
- Q.3** Give a detailed account of petroliferous basins of India. **14**
- Q.4** Describe in detail the different theories of origin of petroleum. **14**
- Q.5 Write short note on:** **14**
 A) Ocean thermal energy
 B) Wind energy and uses
- Q.6 Discuss inn Short:** **14**
 A) Trap rocks
 B) Isopach map
- Q.7 Write in brief of the following:** **14**
 A) Porosity and permeability
 B) Structural trap and salt dome.

Master of Science – II (Applied Geology)
Examination: Oct / Nov 2016 Semester – III (Old CGPA)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 53	Friday 18/11/2016	02:30 P.M to 05:00 P.M	Mineral Exploration	X	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7

Total Marks:70

Q.1 Fill in the blanks.

14

- 1) Which of the following a rotary drilling cannot access?
 - a) Type of the rock
 - b) Mineralogy of the rock
 - c) Texture of the rock
 - d) All of the above

- 2) Which of the following is the common method used for sampling of placer deposits?
 - a) Churn drilling
 - b) Auger drilling
 - c) Rotary drilling
 - d) Jet

- 3) In mafic igneous rock the most common geochemical association is -----
 - a) Si-k-Na
 - b) Fe-Mg-Ti
 - c) Ag-Au-As
 - d) Zn-Pb-Ba-F-Sr

- 4) Geochemical anomalies are termed significant when -----
 - a) They are related to the ore deposit
 - b) They are unrelated to ore deposit
 - c) Confirm ore deposit
 - d) None of the above

- 5) Mercury vapor sampling is used as a guide to -----
 - a) Metallic ore deposit
 - b) Note metallic ore deposit
 - c) Sulphide ore deposit
 - d) Carbonate ore deposit

- 6) Find the odd match the following
 - a) Chromite- Pegmetite
 - b) Bauxite- Khondalite
 - c) Gold-Amphibolite
 - d) Diamond-Granite

- 7) The random collection of broken chip from the exposed surface of an outcrop is -----
 - a) Grab sample
 - b) Groove sample
 - c) Bulk sample
 - d) Channel sample

Master of Science – II (Applied Geology)
Examination: Oct / Nov 2016 Semester – III (Old CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SE – 55	Wednesday 23/11/2016	02:30 P.M To 05:00 P.M	Remote Sensing and GIS	XII	

- Instructions:**
- 1) Answer any five questions.
 - 2) All questions carry equal marks.
 - 3) Q.1 is compulsory.
 - 4) Attempt any two from Q.2, 3 & 4
 - 5) Attempt any two from Q.5, 6 & 7
 - 6) Draw neat and labeled diagrams wherever necessary.

Total Marks:70

Q.1 Fill in the blanks with appropriate choice

14

- 1) Digitization error may crated -----
 - a) Over shoot
 - b) Vertex
 - c) Node
 - d) All the above

- 2) LISS-I is of spatial resolution -----
 - a) 10 m
 - b) 90
 - c) 70
 - d) 72.5 m

- 3) ----- wavelength can penetrate clouds.
 - a) Optical
 - b) Thermal
 - c) Microwave
 - d) All the above

- 4) Temporal resolution of IRS-LISS – II P6 satellite is -----
 - a) 20 day
 - b) 24 day
 - c) 27 day
 - d) 35 day

- 5) Passive remote sensing system have their own source of energy.
 - a) True
 - b) false

- 6) Combination of hardware, software, people and data can be called as GIS.
 - a) True
 - b) false

- 7) Altitude of geostationary satellite is -----
 - a) 20000Km
 - b) 36000 Km
 - c) 900 Km
 - d) 700 Km

- 8) ----- is a computer system for capturing, storing, analyzing, manipulating and display spatial and spatial data.
 - a) Remote sensing
 - b) GPS
 - c) GIS
 - d) Both a and b

