

Code No.	T – 2125
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Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2024

**CSS
GEOLOGY**

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General Instructions

1. The Question Paper is having 100 Objective Questions, each carrying one mark.
2. The answers are to be (✓) 'tick marked' **only** in the "**Response Sheet**" provided.
3. **Negative marking** : **0.25 marks** will be deducted for each wrong answer .

Time : 2 Hours

Max. Marks : 100

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

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Choose appropriate answer from the options in the questions. **(100 × 1 = 100 marks)**

1. Point of minimum curvature in the folded layer is known as
 - A. Crest
 - B. Trough
 - C. Inflection
 - D. Hinge

DO NOT WRITE HERE

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2. A syncline is defined as
- A. limbs are dipping towards each other in same direction
 - B. limbs are dipping towards each other but in opposite direction
 - C. limbs are dipping away from each in same direction
 - D. limbs are dipping away from each in opposite direction
3. Orientation of axial plane of a horizontal upright fold is
- A. horizontal
 - B. vertical
 - C. inclined
 - D. curved

4. A fold that characterised by presence of double hinge
- A. Box fold
 - B. Fan fold
 - C. Recumbent fold
 - D. Overturned fold
5. Fault whose hanging wall moved upward relative to footwall during faulting is termed as
- A. Reverse fault
 - B. Normal fault
 - C. Sinistral strike fault
 - D. Dextral strike fault
6. Which of the followings feature developed during compressional ductile deformation?
- A. fault and joints
 - B. folds and faults
 - C. only folds
 - D. only faults
7. Shortening of the earth's crust is associated with
- A. Folding and normal faulting
 - B. Folding and reverse faulting
 - C. Faulting and joints
 - D. Only folding
8. Which among the following folds have horizontal axial plane?
- A. Plunging upright
 - B. Horizontal upright
 - C. Reclined
 - D. Recumbent
9. Line of intersection of fault plane with imaginary horizontal earth surface is called
- A. Dip of a fault
 - B. Strike of a fault
 - C. Fault plane
 - D. Net slip of a fault
10. Dome is defined as
- A. a closing upward pattern with distinct trend of fold-axis
 - B. a closing downward pattern with distinct trend of fold-axis
 - C. a closing upward pattern with no distinct trend of fold-axis
 - D. a closing downward pattern with no distinct trend of fold-axis

11. Orientation of dip-isogons in a similar fold are
A. Divergent
B. Parallel
C. Weakly convergent
D. Strongly convergent
12. Igneous texture characterized by euhedral minerals are
A. Ophitic
B. Panidiomorphic
C. Corona
D. Holohyalline
13. Si:O ratio in the framework (tectosilicates) silicates
A. 1:2
B. 1:4
C. 1:3
D. 4:11
14. Which of the followings is a Cr-bearing garnet?
A. Uvarovite
B. Grossular
C. Pyrope
D. Andradite
15. Serpentine group of minerals belongs to
A. Phyllosilicates
B. Orthosilicates
C. Cyclosilicate
D. Chain-silicates
16. Mineral "jadeite" is a
A. Calcium pyroxene
B. Sodium amphibole
C. Sodium pyroxene
D. Calcium amphibole
17. $2/m 2/m 2/m$ belongs to
A. Hexagonal system
B. Orthorhombic system
C. Tetragonal system
D. Monoclinic system
18. Group of four faces cut any one of the horizontal axes and are essentially parallel to the vertical c-axis,
A. Pyramid
B. Dome
C. Pinacoid
D. Prism

19. Interfacial angle of crystals is measured with the help of
- A. Clinometer
 - B. Becke line method
 - C. Goniometer
 - D. Gravimeter
20. Two sets of cleavages with intersection angles of 87° - 93° is the characteristics of
- A. Olivine
 - B. Amphibole
 - C. Pyroxene
 - D. Epidote
21. Change in quality and quantity of colour of a mineral under plane polarized light condition
- A. Interference colour
 - B. Pleochroism
 - C. Interference figure
 - D. Extinction
22. Which of the following is not a hydrous mineral?
- A. Biotite
 - B. Amphibole
 - C. Epidote
 - D. Akmerite
23. Example of optically isotropic mineral
- A. Olivine
 - B. Garnet
 - C. Quartz
 - D. Calcite
24. Optic axis of a crystal is designated as
- A. an axis along with no double refraction of light
 - B. an axis along with double refraction of light
 - C. an axis along with total internal reflection of light
 - D. an axis along with double reflection of light
25. Mineral pyrite (FeS_2) belongs to which class of the isometric system?
- A. Diploidal class
 - B. Hextetrahedral class
 - C. Hexoctahedral class
 - D. Tetartoidal class

26. Total number of the optic axes present in biaxial crystals
- A. 1
 - B. 2
 - C. 3
 - D. 0
27. Essential minerals in granite are
- A. Quartz + mica + k-feldspar
 - B. Quartz + k-feldspar+ plagioclase
 - C. K-feldspar + biotite + nepheline
 - D. K-feldspar + plagioclase
28. Graphic texture exhibit which mode of crystallization
- A. Eutectic
 - B. Solid solution
 - C. Peritectic
 - D. Epitaxis
29. Igneous rock characterised by the presence of orthopyroxenes and plagioclase feldspar as essential mineral phases is
- A. Granite
 - B. Anorthosite
 - C. Norite
 - D. Gabbro
30. Which mineral typically exhibit blue colour in the blueschist facies rock?
- A. Lawsonite
 - B. Jadeite
 - C. Actinolite
 - D. Glaucophane
31. The mineral coesite is expected to be stable in which of the following metamorphic facies?
- A. Greenschist
 - B. Blueschist
 - C. Eclogite
 - D. Granulite
32. A dolerite dyke metamorphosed under amphibolite facies condition is expected to have the mineral assemblage
- A. Chlorite + Actinolite + Albite
 - B. Lawsonite + Glaucophane + Epidote
 - C. Orthopyroxene + Clinopyroxene + Plagioclase
 - D. Hornblende + Plagioclase

33. Granoblastic polygonal is a metamorphic texture which commonly found in
- A. Schist
 - B. Phyllites
 - C. Slates
 - D. Quartzite
34. A basic igneous protolith experienced eclogite facies of metamorphism, the characteristics mineral assemblage of metamorphosed rock will be
- A. Hornblende + plagioclase ± garnet
 - B. Orthopyroxene + clinopyroxene + plagioclase
 - C. Omphacite + pyrope garnet
 - D. Clinopyroxene + garnet + plagioclase
35. Which of the following sedimentary environments oscillation ripples are formed?
- A. Alluvial
 - B. Beach
 - C. Deep Sea
 - D. Desert
36. Which of the following statements related to depositional environments is correct?
- A. Herringbone cross-stratification indicates glacio-fluvial environment
 - B. Dune is characterized by the presence of finer-grains at the top and coarser-grains at the bottom
 - C. Drop-stone is of fluvial origin
 - D. Bouma sequence indicates turbidite deposit
37. Graded bedding is the result of deposition by
- A. River
 - B. Blowing wind
 - C. Moving ice
 - D. Turbidity currents
38. Choose the correct sequence of the deformation and metamorphism
- A. Shale, slate, schist, phyllite, gneiss
 - B. Shale, slate, phyllite, schist, gneiss
 - C. Slate, shale, phyllite, schist, gneiss
 - D. Slate, shale, schist, phyllite, gneiss

39. Which of the following sedimentary structure could be used for determination top and bottom?
- A. Planer cross bedding B. Asymmetrical ripple marks
C. Symmetrical ripple marks D. None of the above
40. Geomorphc landform “loess” is form by which of the following geomorphc agent
- A. Glacial B. Groundwater
C. River D. Wind
41. Which of the following pair of rock and eruptive setting is correctly matched?
- A. Shoshonite – Active continental margin
B. Carbonatite – Ocean Island
C. Andesite – Intra-cratonic
D. Kimberlite – Ocean-continent collision
42. Active back arc is associated with
- A. Ocean-continent convergence B. Transform fault
C. Continent-continent collision D. Ocean-ocean convergence
43. Most abundant mineral of the Earth’s curst is
- A. Pyroxenes B. Feldspars
C. Quartz D. Micas
44. Which of the following represents the longest mountain chain on Earth?
- A. Mid-Atlantic ridge B. Himalayas
C. Andes D. Alpes
45. Coarse grained gneissic rock rich in hypersthene is called
- A. Charnockite B. Khondalite
C. Kodurite D. Gondite

46. "Negative flower" structure is developed in which stress environment:
- Spike-fault with trans-compression condition
 - Strike-fault with trans-tension condition
 - Extension condition
 - Thrust fault with compression condition
47. As compared with metamorphism, diagenesis is
- Similar to metamorphism
 - Takes place at lower temperature and pressures
 - Takes place at higher temperature and pressures
 - Takes place at greater depth that are well within the mantle
48. A sedimentary rock composed of < 15% of matrix and > 25% of rock fragments is grouped under
- | | |
|-------------------|--------------------|
| A. Lithic wacke | B. Arkosic arenite |
| C. Lithic arenite | D. Arkosic wacke |
49. A lenticular clast-supported conglomerate with a(t) b(i) clast imbrication is interpreted as the product of
- | | |
|-----------------|----------------------------|
| A. Debris flows | B. Turbidity current |
| C. Channel lag | D. Hyper-concentrated flow |
50. Which one is the correct order of minerals during chemical weathering (from the most stable to least stable)?
- Muscovite > Amphibole > Quartz > Olivine
 - Quartz > Amphibole > Olivine > Muscovite
 - Muscovite > Olivine > Quartz > Amphibole
 - Quartz > Muscovite > Amphibole > Olivine
51. Syneresis cracks are
- A form of desiccation crack
 - A type of trace fossil
 - Sub-aqueous shrinkage cracks
 - A type of penecon temporaneous deformation feature

52. Smallest mappable stratigraphic unit is
- | | |
|--------------|---------------|
| A. Member | B. Supergroup |
| C. Formation | D. Bed |
53. Which of the following is a geochronologic unit?
- | | |
|-----------|--------------|
| A. System | B. Period |
| C. Member | D. Formation |
54. Sandstone beds above a magmatic body are domal in shape, while the beds below are horizontal. The magmatic body is a
- | | |
|--------------|--------------|
| A. Batholith | B. Laccolith |
| C. Lopolith | D. Sill |
55. Buckle folds results from
- | | |
|------------------------------------|-----------------------------|
| A. Layer parallel compression | B. Layer parallel shearing |
| C. Layer perpendicular compression | D. Layer perpendicular slip |
56. Metamorphic mineral assemblages of low P/T metamorphism of pelitic rocks are represented on
- | | |
|--------|--------|
| A. ACF | B. AKF |
| C. AFM | D. CMS |
57. What is the grain size of volcanic rock Tuff?
- | | |
|-----------------|--------------|
| A. Very coarse | B. Coarse |
| C. Intermediate | D. Very fine |
58. Transverse wave or S-wave don not travels in
- | | |
|-----------------|-----------------|
| A. Upper mantle | B. Lower mantle |
| C. Outer core | D. Inner core |
59. The plutonic rocks are formed at depths below the earth's surface ranging
- | | |
|-----------------|------------------|
| A. 10 to 100 km | B. 100 to 200 km |
| C. 7 to 10 km | D. 1 to 5 km |

60. Hornfels texture is a characteristic of
- | | |
|----------------------------|-------------------------------|
| A. Regional metamorphism | B. Contact metamorphism |
| C. Fault-zone metamorphism | D. Hydro-thermal metasomatism |
61. Grain size sorting is extremely poor in which of following type of depositional environment?
- | | |
|------------|------------|
| A. Aeolian | B. Glacial |
| C. Fluvial | D. Marine |
62. The rocks which exhibit mixed characteristics of volcanic and plutonic rocks are _____
- | | |
|-----------------------|--------------------|
| A. Intermediate rocks | B. Mixed rocks |
| C. Hypabyssal rocks | D. Secondary rocks |
63. Which of the following is a glacial landform?
- | | |
|--------------|---------------|
| A. Cirque | B. Ventifacts |
| C. Point Bar | D. Tephra |
64. Which one of the following features is NOT associated with sedimentary rocks?
- | |
|---|
| A. Bedding |
| B. Foliation |
| C. Fossil |
| D. All may be associated with sedimentary rocks |
65. Residual hill in the desert region is known as
- | | |
|-----------|--------------|
| A. Inlier | B. Inselberg |
| C. Playa | D. Pediment |
66. Lithosphere includes
- | | |
|-------------------------------|---------------------------------|
| A. Upper crust | B. Lower crust and whole mantle |
| C. Crust and uppermost mantle | D. Mantle and outer core |

67. In a Binary System, two crystallization curves joining a point where simultaneous crystallization of two minerals components takes place is called as :
- A. Peritectic Point
 - B. Eutectic Point
 - C. Cotectic Point
 - D. None
68. Cassiterite is an ore of
- A. Tungsten
 - B. Lead
 - C. Silver
 - D. Iron
69. Transition from spinel to perovskite structure occurs between
- A. Lower mantle and outer core
 - B. Outer core and inner core
 - C. Upper mantle and lower mantle
 - D. Lower crust and upper mantle
70. Spinifex texture is the characteristic of
- A. Lherzolite
 - B. Komatiite
 - C. Kimberlite
 - D. Boninite
71. Which of the following mineral deposit is formed exclusively by surface geological processes?
- A. Wollastonite
 - B. Asbestos
 - C. Corundum
 - D. Bauxite
72. An ore body showing 'saddle reef' structure is formed by
- A. Early magmatic crystallization process
 - B. Liquid immiscibility
 - C. Hydrothermal process
 - D. Metamorphic process
73. Which of the following is the oldest oil-field in India?
- A. Bombay high
 - B. Cambay Basin
 - C. Digboi
 - D. Krishna-Godavari Basin

83. Choose the correct statement from the following:
- A. Vindhayan supergroup is devoid of limestone
 - B. The top of the Cuddapah Supergroup is Phanerozoic
 - C. Kaladgi basin is situated in the Baster Craton
 - D. The Mesozoic Bhuj Formation consist predominantly of sandstone
84. Identify the correct chronostratigraphic sequence of the Siwalik Group from the following (Oldest to youngest)
- A. Pinjor-Nagri-Dhok-Pathan-Tatrot
 - B. Nagri-Dhok Pathan-Tatrot-Pinjor
 - C. Dhok Pathan-Tatrot-Nagri-Pinjor
 - D. Tatrot-Pinjor-Nagri-Dhok Pathan
85. A specimen used as diagnostic of a particular new species is known as
- A. Holotype
 - B. Paratype
 - C. Lectotype
 - D. Neotype
86. Spiti shale deposited during the_____ time.
- A. Mesozoic
 - B. Archean
 - C. Proterozoic
 - D. Palaeozoic
87. Syringothyris is characteristic fossils of
- A. Silurian
 - B. Ordovician
 - C. Carboniferous
 - D. Cambrian
88. Umaria Marine beds are marine inter-relation in
- A. Karewa group
 - B. Siwalik group
 - C. Lower Gondwana
 - D. Middle Gondwana

89. Which one of the following floras represents Upper Gondwana?
- A. Noeggerathiopsis
 - B. Gangamopteris
 - C. Dicroidium
 - D. Vertebraria
90. Out of these, which is intrusive into Delhi system:
- A. Bijli Rhyolite
 - B. Erinpura Granite
 - C. Bundelkhand Granite
 - D. Singhbhum Granite
91. An organism is more likely to become fossilized if
- A. It is exposed to open air after death
 - B. The organism dies in the ocean and descends to the seabed
 - C. The organism is a soil-bodied creature like a slug
 - D. All of the above
92. Which of the following cephalopods shows most complex suture line?
- A. Ceratite
 - B. Goniatite
 - C. Nautiloid
 - D. Ammonite
93. Trilobites is an index fossil for _____ era.
- A. Mesozoic
 - B. Palaeozoic
 - C. Cenozoic
 - D. Proterozoic
94. "Foramen" is the characteristic morphological feature of
- A. Gastropods
 - B. Bivalvia
 - C. Corallites
 - D. Brachiopods

95. "Columella" is the characteristic morphological feature of
- A. Gastropods
 - B. Bivalvia
 - C. Corallites
 - D. Brachiopods
96. Cephalopods are
- A. Fresh water animal
 - B. Both fresh water and marine animal
 - C. Exclusively marine animal
 - D. Terrestrial animal
97. Which of the following is known as modern horse?
- A. Meryhippus
 - B. Orohippus
 - C. Pliohippus
 - D. Equus
98. Composition of test of the "conodonts" microfossils is
- A. Calcareous
 - B. Siliceous
 - C. Phosphatic
 - D. Chitinous
99. Which of the following group of fossils became extinct at the Permo-Triassic boundary?
- A. Graptolites
 - B. Trilobites
 - C. Ammonites
 - D. Ediacaran
100. Which of the following morphological features is related to trilobites?
- A. Delthyrium
 - B. Pedicle
 - C. Telson
 - D. Auricle

ANSWER SHEET

1	A	B	C	D	E	26	A	B	C	D	E	51	A	B	C	D	E	76	A	B	C	D	E
2	A	B	C	D	E	27	A	B	C	D	E	52	A	B	C	D	E	77	A	B	C	D	E
3	A	B	C	D	E	28	A	B	C	D	E	53	A	B	C	D	E	78	A	B	C	D	E
4	A	B	C	D	E	29	A	B	C	D	E	54	A	B	C	D	E	79	A	B	C	D	E
5	A	B	C	D	E	30	A	B	C	D	E	55	A	B	C	D	E	80	A	B	C	D	E
6	A	B	C	D	E	31	A	B	C	D	E	56	A	B	C	D	E	81	A	B	C	D	E
7	A	B	C	D	E	32	A	B	C	D	E	57	A	B	C	D	E	82	A	B	C	D	E
8	A	B	C	D	E	33	A	B	C	D	E	58	A	B	C	D	E	83	A	B	C	D	E
9	A	B	C	D	E	34	A	B	C	D	E	59	A	B	C	D	E	84	A	B	C	D	E
10	A	B	C	D	E	35	A	B	C	D	E	60	A	B	C	D	E	85	A	B	C	D	E
11	A	B	C	D	E	36	A	B	C	D	E	61	A	B	C	D	E	86	A	B	C	D	E
12	A	B	C	D	E	37	A	B	C	D	E	62	A	B	C	D	E	87	A	B	C	D	E
13	A	B	C	D	E	38	A	B	C	D	E	63	A	B	C	D	E	88	A	B	C	D	E
14	A	B	C	D	E	39	A	B	C	D	E	64	A	B	C	D	E	89	A	B	C	D	E
15	A	B	C	D	E	40	A	B	C	D	E	65	A	B	C	D	E	90	A	B	C	D	E
16	A	B	C	D	E	41	A	B	C	D	E	66	A	B	C	D	E	91	A	B	C	D	E
17	A	B	C	D	E	42	A	B	C	D	E	67	A	B	C	D	E	92	A	B	C	D	E
18	A	B	C	D	E	43	A	B	C	D	E	68	A	B	C	D	E	93	A	B	C	D	E
19	A	B	C	D	E	44	A	B	C	D	E	69	A	B	C	D	E	94	A	B	C	D	E
20	A	B	C	D	E	45	A	B	C	D	E	70	A	B	C	D	E	95	A	B	C	D	E
21	A	B	C	D	E	46	A	B	C	D	E	71	A	B	C	D	E	96	A	B	C	D	E
22	A	B	C	D	E	47	A	B	C	D	E	72	A	B	C	D	E	97	A	B	C	D	E
23	A	B	C	D	E	48	A	B	C	D	E	73	A	B	C	D	E	98	A	B	C	D	E
24	A	B	C	D	E	49	A	B	C	D	E	74	A	B	C	D	E	99	A	B	C	D	E
25	A	B	C	D	E	50	A	B	C	D	E	75	A	B	C	D	E	100	A	B	C	D	E

ROUGH WORK

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