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TEST BOOKLET

Sl. No. : **0068**

Subject : GEOLOGY

Post : Lab. Asst.-cum-Storekeepers

**WRITTEN EXAMINATION FOR RECRUITMENT OF NON-TEACHING POSTS
(JUNIOR ASSISTANTS, PHYSICAL EDUCATION TEACHERS(P.E.Ts) AND
LABORATORY ASSISTANT-CUM-STOREKEEPERS) IN GOVT. DEGREE
COLLEGES, ODISHA**

Time Allowed : 2 Hours

Maximum Marks: 150

: INSTRUCTIONS TO CANDIDATES :

1. **IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET CONTAINS 16 PAGES AND DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.**
2. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write anything else on the Test Booklet.

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3. The Test Booklet contains **100** questions. Each question comprises four options. You have to select the correct answer which you want to mark (darken) on the OMR Answer Sheet. In any case, choose **ONLY ONE** answer for each question. If more than one answer is darkened, it will be considered wrong.
4. You have to mark (darken) all your answers only on the **OMR Answer Sheet using BLACK BALL POINT PEN** provided by the State Selection Board. You have to do rough work only in the space provided at the end of the Test Booklet. See instructions in the OMR Answer Sheet.
5. All questions carry equal marks. While **1.5** marks will be awarded for each correct answer, each wrong answer will result in negative marking of **0.50** mark.
6. Before you proceed to mark (darken) the answers in the OMR Answer Sheet to the questions in the Test Booklet, you have to fill in some particulars in the OMR Answer Sheet as per the instructions in your Admit Card.
7. On completion of the Examination, you should hand over the **original copy of OMR Answer Sheet** issued to you to the Invigilator before leaving the Examination Hall. You are allowed to take with you the candidate's copy (second copy) of the OMR Answer Sheet along with the Test Booklet for your reference.

Candidate's full signature

Invigilator's signature

P.T.O.

SEAL

1. The discontinuity occurring at a depth of about 2900 km in the earth's interior is known as :

(A) Bullen discontinuity	(B) Mohorovicic discontinuity
(C) Gutenberg-Wiechert discontinuity	(D) Repetti discontinuity
2. Nontransmission of S-waves in the outer core indicates its state as :

(A) Liquid	(B) Solid
(C) Gaseous	(D) Rocky
3. The violent type of Volcanoes where lavas, gases and small to large pyroclasts are ejected sporadically are known as :

(A) Pelean type	(B) Strombolian type
(C) Vesuvian type	(D) Hawaiian type
4. The point of origin of the earthquake is known as :

(A) Epicentre	(B) Focus
(C) Antiepicentre	(D) Seismic belt
5. Most of the disastrous earthquakes are caused due to :

(A) Displacements in the parts of lithosphere	(B) Volcanic eruptions
(C) Landslides	(D) Explosions
6. The process by which sedimentary particles are transported by rolling along the bottom surface of the medium is called :

(A) Traction	(B) Suspension
(C) Saltation	(D) Solution
7. The stage of the streams where V-shaped valleys are formed is :

(A) Mature stage	(B) Old stage
(C) Youthful stage	(D) End stage
8. A sharp ridge between two adjacent cirques formed by glacial action is known as :

(A) Arete	(B) Tarn
(C) Horn	(D) Hanging valley

9. Large amount of rock debris heaped up in form of a ridge parallel to the shore line is called :
- (A) Tombolo (B) Wave cut cliff
(C) Spits (D) Wave cut bench
10. The wind abraded pebbles which are polished at different sides are called :
- (A) Ventifacts (B) Zeugen
(C) Yardang (D) Pedestal rock
11. The general symbol of Octahedron is :
- (A) (hkl) (B) (hko)
(C) (011) (D) (111)
12. If a crystallographic face cuts a-axis at unit distance, b-axis at twice the unit distance and c-axis at half of the unit distance, the Miller indices is :
- (A) (142) (B) (241)
(C) (214) (D) (421)
13. What is the common lustre of Micas?
- (A) Resinous (B) Pearly
(C) Vitreous (D) Adamantine
14. In which of the following systems, the normal class has only one crystallographic axis of 2 fold symmetry?
- (A) Orthorhombic system (B) Monoclinic system
(C) Triclinic system (D) Tetragonal system
15. $(11\bar{2}0)$ is the general symbol of :
- (A) Hexagonal prism of 1st order (B) Hexagonal prism of 2nd order
(C) Dihexagonal prism (D) Hexagonal dipyramid of 1st order
16. Which mineral out of the following coystallises in normal class of orthorhombic system?
- (A) Barite (B) Galena
(C) Zircon (D) Gypsum

17. Which out of the following forms in Monoclinic system, the general symbol is (010)?
(A) Prism (B) c-pinacoid
(C) a-pinacoid (D) b-pinacoid.
18. The form of the needle like crystals is known as :
(A) Bladed (B) Dendritic
(C) Acicular (D) Foliated
19. Which out of the following indicates silicate structure of orthoclase?
(A) Nesosilicate (B) Inosilicate
(C) Phyllosilicate (D) Tecto silicate
20. Which out of the following minerals has a Sorosilicate structure?
(A) Beryl (B) Hemimorphite
(C) Angite (D) Quartz
21. Garnets are characterized by :
(A) One set cleavage (B) Two sets cleavage.
(C) Three sets cleavage (D) No cleavage
22. Which of the following garnets has the chemical composition of $\text{Mg}_3\text{Al}_2\text{Si}_3\text{O}_{12}$?
(A) Pyrope (B) Almandine
(C) Spessartite (D) Grossular
23. Enstatite has a chemical composition of :
(A) $(\text{Mg, Fe})\text{SiO}_3$ (B) MgSiO_3
(C) $\text{CaFeSi}_2\text{O}_6$ (D) $\text{LiAlSi}_2\text{O}_6$
24. Which mineral out of the following is strongly pleochroic?
(A) Augite (B) Muscovite
(C) Orthoclase (D) Hornblende
25. The hardness of muscovite in Mohs' scale is :
(A) 1 to 2 (B) 2 to 3
(C) 3 to 4 (D) 4 to 5

26. Which out of the following is a calcic feldspar?
- (A) Anorthite (B) Albite
(C) Orthoclase (D) Celsian
27. Which mineral out of the following crystallizes in Triclinic system?
- (A) Muscovite (B) Albite
(C) Hypersthene (D) Hornblende
28. Which out of the following minerals is used for construction of nicol prism?
- (A) Quartz (B) Gypsum
(C) Calcite (D) Mica
29. Uniaxial minerals in which refractive indices of ordinary ray is less than that of the extraordinary ray are :
- (A) Optically negative (B) Optically positive
(C) Optically neutral (D) Pleochroic
30. The absorption formula of hornblende is :
- (A) $Z > Y > X$ (B) $Z < Y < X$
(C) $Z > Y < X$ (D) $Z < Y > X$
31. The cleavage angles of amphiboles are :
- (A) 90° and 90° (B) 87° and 93°
(C) 56° and 124° (D) 75° and 105°
32. Which mineral out of the following exhibits cross-hatched twinning?
- (A) Orthoclase (B) Microcline
(C) Oligoclase (D) Quartz
33. The extinction angle of enstatite is nearly :
- (A) 27° (B) 0°
(C) 45° (D) 60°
34. Muscovite has perfect cleavage along :
- (A) (100) (B) (111)
(C) (110) (D) (001)

35. The vertical component of the net slip of a fault is known as :
- (A) Heave (B) Strike slip
(C) Throw (D) Dipslip
36. A fold with horizontal to near horizontal axial plane is known as :
- (A) Vertical fold (B) Recumbent fold
(C) Upright fold (D) Inclined fold
37. The fold where the orthogonal thickness is equal every where is known as :
- (A) Concentric fold (B) Similar fold
(C) Shear fold (D) Fan fold
38. A fault in which the hanging wall goes downwards relative to the foot wall is known as :
- (A) Strike-slip fault (B) Reverse fault
(C) Thrust fault (D) Normal fault
39. A large scale structure where a valley is produced by downthrow of a crystal block bounded on either side by two gravity faults dipping towards each other is known as :
- (A) Horst (B) Under thrust
(C) Graben (D) Terrace
40. Which out of the following does not indicate presence of a fault?
- (A) Slicken sides (B) Mylonites
(C) Conglomerate (D) Repetition of beds
41. The unconformity separating a younger sedimentary unit from an older plutonic igneous rock is known as :
- (A) Disconformity (B) Nonconformity
(C) Angular unconformity (D) Para unconformity
42. Economic minerals unevenly and sparsely distributed throughout an igneous body is known as :
- (A) Segregation (B) Injection
(C) Dissemination (D) Accumulation

43. The temperature range of formation of a mesothermal economic mineral deposit is :
- (A) 200 to 300°C (B) 50 to 200°C
(C) 300 to 500°C (D) 500 to 1000°C.
44. Which mineral out of the following has chemical composition of MnO_2 ?
- (A) Braunite (B) Psilomelane
(C) Rhodonite (D) Pyrolusite
45. In which area out of the following in Odisha, titaniferous and vanadiferous magnetite deposits are located?
- (A) Kumardhubi (B) Daiteri
(C) Malangtoli (D) Gorumahisani
46. The gonditic type manganese deposits of Odisha are associated with rocks of :
- (A) Iron Ore Group (B) Eastern Ghats Supergroup
(C) Gangpur Group (D) Dhanjori Group
47. Cu_5FeS_4 is the chemical composition of :
- (A) Chalcopyrite (B) Chalcocite
(C) Covellite (D) Bornite
48. In Khetri copper belt, the copper ore deposits are associated with rocks of :
- (A) Delhi Supergroup (B) Aravalli Group
(C) Chilpighat Group (D) Singhbhum Group
49. East coast bauxite deposits of Odisha are formed by the process of :
- (A) Mechanical concentration (B) Residual concentration
(C) Magmatic concentration (D) Sedimentation
50. Rich graphite deposits of Odisha are associated with rocks of :
- (A) Eastern Ghats Supergroup (B) Dhanjori Group
(C) Gangpur Group (D) Chhatishgarh Group

51. Which of the following coal lithotype is brilliantly glossy with jet black colour?
 - (A) Durain
 - (B) Clarain
 - (C) Fussain
 - (D) Vitrain
52. In Bihar mica belt, the common mica minerals are :
 - (A) Biotite
 - (B) Phlogopite
 - (C) Muscovite
 - (D) Zinnwaldite
53. In which of the following states, Tertiary coal deposits are located?
 - (A) Meghalaya
 - (B) Odisha
 - (C) Jharkhand
 - (D) Chhatisgarh
54. Which rock out of the following has least electrical resistivity value?
 - (A) Shale
 - (B) Granite
 - (C) Sandstone
 - (D) Limestone
55. By which climate out of the following, Talchir Boulder Bed is originated?
 - (A) Fluvial
 - (B) Aeolian
 - (C) Glacial
 - (D) Lacustrine
56. Which out of the following formations contains workable pyrite deposits?
 - (A) Bijaygarh Shale
 - (B) Jhiri Shale
 - (C) Sirbu shale
 - (D) Ganurgarh Shale
57. Which out of the following is the source rock for bauxite in East Coast Bauxite deposits?
 - (A) Sandstone
 - (B) Khondalite
 - (C) Granite
 - (D) Syenite
58. PbSO_4 is the chemical composition of :
 - (A) Cerussite
 - (B) Anglesite
 - (C) Smithsonite
 - (D) Galena
59. The placer deposits which are formed due to accumulation of heavy mineral fractions at the foot of hill slopes are known as :
 - (A) Colluvial placers
 - (B) Deluvial placers
 - (C) Eluvial placers
 - (D) Alluvial placers

60. In Bombay High Petroleum field, the host rocks for petroleum is :
- (A) Limestone (B) Sandstone
(C) Shale (D) Conglomerate
61. In Digboi oil field, most of the petroleum is obtained from :
- (A) Tipam Sandstone Formation (B) Girujan Clay Formation
(C) Kopili Shale Formation (D) Sylhet Limestone Formation
62. In which of the following Formations in Odisha, huge limestone deposits are located?
- (A) Kumarmunda Formation (B) Ghoriajhor Formation
(C) Birmitrapur Formation (D) Raghunathpali Formation
63. Rich chrysotile asbestos deposits of Pulivendla belt are associated with :
- (A) Vempalle Limestone (B) Tadpatri Shale
(C) Bhandar Limestone (D) Fawn Limestone
64. The intergrowth texture between quartz and plagioclase is known as :
- (A) Perthitic (B) Orbicular
(C) Antiperthitic (D) Myrmekitic
65. Which out of the following is the plutonic equivalent of Dolerite?
- (A) Gabbro (B) Peridotite
(C) Syenite (D) Diorite
66. A plutonic igneous rock containing labradorite and orthopyroxene as essential minerals is known as :
- (A) Peridotite (B) Norite
(C) Gabbro (D) Syenite
67. Which out of the following is a plutonic igneous rock containing more than 95% by volume of calcic plagioclases?
- (A) Syenite (B) Carbonatite
(C) Anorthosite (D) Granodiorite

68. A plano-convex shaped form of an igneous rock mass with a flat base and convex top is known as :
- (A) Lopolith (B) Laccolith
(C) Phacolith (D) Batholith
69. Which out of the following is an ultrabasic plutonic igneous rock containing olivine and pyroxene as essential minerals?
- (A) Syenite (B) Dunite
(C) Carbonatite (D) Peridotite
70. The igneous texture formed due to small crystals being enclosed within big crystals is called :
- (A) Hypidiomorphic (B) Porphyritic
(C) Poikilitic (D) Allotriomorphic
71. The sediment particle with size varying from 2 mm to 4 mm is regarded as :
- (A) Granule (B) Sand
(C) Pebble (D) Silt
72. As per Pettijohn's roundness grade classification, the value varying from 0.40 to 0.60 indicates :
- (A) well rounded (B) Rounded
(C) Subrounded (D) Subangular
73. In a conglomerate, when pebbles are of different mineralogical composition with low matrix proportion, it is known as :
- (A) Polymictic conglomerate (B) Oligomictic conglomerate
(C) Tillite (D) Conglomeratic argillites
74. The essential mineralogical composition of charnockite is :
- (A) Quartz, Feldspars, Hornblende (B) Quartz, Feldspars
(C) Quartz, Feldspars, Hypersthene (D) Quartz, Feldspars, Biotite
75. An equigranular metamorphic texture containing anhedral minerals is known as :
- (A) Porphyroblastic (B) Hypidioblastic
(C) Idioblastic (D) Xenoblastic

76. The metamorphic structure produced by stress with little or no heat is known as :
- (A) Cataclastic (B) Granulose
(C) Schistose (D) Rapakivi
77. To be regarded as an "Index fossil, it must have :
- (A) Very large age range and limited geographical distribution
(B) Limited age range and limited geographical distribution
(C) Limited age range and wide geographical distribution
(D) Very large age range and wide geographical distribution
78. The dentition in Pelecypods with straight hinge line having numerous small similar sized teeth and sockets is known as :
- (A) Isodont (B) Taxodont
(C) Desmodont (D) Schizodont
79. Which out of the following fossils has essentially parallel venation and without a distinct mid rib?
- (A) Ptilophyllum (B) Glossopteris
(C) Gangamopteris (D) Vertebraria
80. Equilateral but unequal valves are seen in :
- (A) Pelecypods (B) Gastropods
(C) Cephalopods (D) Brachiopods
81. Which out of the following suture lines in cephalopods has rounded saddles and finely crenulated lobes?
- (A) Ceratitic type (B) Goniatitic type
(C) Ammonoid type (D) Nautiloid type
82. Trilobites first appeared during :
- (A) Cretaceous (B) Devonian
(C) Cambrian (D) Permian

83. The visible range of the electromagnetic radiation is :
- (A) 0.4 to 0.7 μm (B) 0.1 to 0.4 μm
 (C) 0.8 to 1.0 μm (D) 0.001 to 0.1 μm
84. Out of the following which is the correct order of porosity in increasing values?
- (A) clay, sand, sandstone, slate (B) granite, sandstone, sand, clay
 (C) clay, silt, sand, sandstone (D) sandstone, sand, clay, granite
85. Which out of the following surface geophysical exploration methods is the most widely applied method for groundwater?
- (A) Seismic reflection (B) Electrical resistivity
 (C) Gravity (D) Magnetic
86. The aquifer of limited areal extension occurring in the zone of aeration is known as :
- (A) Perched aquifer (B) Confined aquifer
 (C) Unconfined aquifer (D) Leaky aquifer
87. The geological materials in the zone of saturation which are highly porous but impermeable are known as :
- (A) Aquifer (B) Aquitard
 (C) Aquiclude (D) Aquifuse
88. What will be the safety of the dam if the beds at the site dip downstream at angles of 10° to 30° ?
- (A) the condition is most favourable
 (B) the condition is most unfavourable
 (C) the condition does not affect the safety
 (D) no seepage of water from the reservoir

89. Which rock out the following has maximum compressive strength?
- (A) Sandstone (B) Limestone
(C) Granite (D) Marble
90. The forceful injection of a slurry of water and cement into a fractured rock to increase its strength at an engineering site is known as :
- (A) Back filling (B) Cement stabilization
(C) Bituminous stabilization (D) Grouting
91. The dam which is best suitable for narrow deep valleys with strong abutment rocks is :
- (A) Buttress dam (B) Earth dam
(C) Arch dam (D) Gravity dam
92. The basic unit of a lithostratigraphic classification that is a mappable on an intermediate scale (1 : 50000) is designated as :
- (A) Bed (B) Member
(C) Formation (D) Group
93. Which Era is regarded as age of reptiles?
- (A) Mesozoic (B) Palaeozoic
(C) Cenozoic (D) Neoproterozoic.
94. Which Group lies below the Kistna Group of the Cuddapah Supergroup in the type area?
- (A) Kurnool Group (B) Nallamalai Group
(C) Cheyair Group (D) Papaghai Group
95. Which Group / Supergroup of rocks overlie Peninsular Gneiss with an unconformity at the base?
- (A) Dharwar Supergroup (B) Iron Ore Group
(C) Aravalli Group (D) Cuddapah Supergroup

96. Which Formation is the oldest of the Jurassics of Kutch?
- (A) Chari (B) Patcham
(C) Katrol (D) Umia
97. The Formation overlying Barakar Formation in the Gondwana sequence is :
- (A) Talchir Formation (B) Raniganj Formation
(C) Karharbari Formation (D) Barren Measures Formation
98. The oldest Formation of the Siwalik Group is :
- (A) Pinjor Formation (B) Dhokpathan Formation
(C) Kamlial Formattin (D) Tatrot Formation
99. Baripada beds of Odisha belong to :
- (A) Tertiary age (B) Jurassic age
(C) Cretaceous age (D) Gondwana age
100. Which climatic-condition out of the following is indicated from the deposition of huge quantities of coal?
- (A) Glacial climate (B) Humid-tropical climate
(C) Arid climate (D) Fluvio-glacial climate

SPACE FOR ROUGH WORK

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SEAL