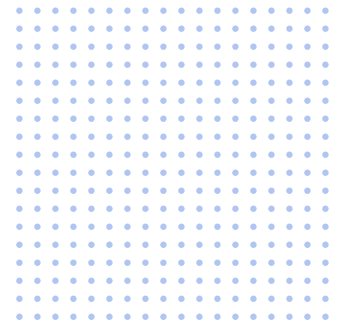




FOR PUMDET PREPARATION

PUMDET 2024

Question Paper

Applied Geology

EXAM	YEAR	TYPE
PUMDET	2024	Question Paper

PUMDET-2024

Subject : APPLIED GEOLOGY

4031200485

(Booklet Number)



Duration : 90 Minutes

No. of Questions : 50

Full Marks : 100

INSTRUCTIONS

1. All questions are of objective type having four answer options for each. Only one option is correct. Correct answer will carry full marks 2. In case of incorrect answer or any combination of more than one answer, $\frac{1}{2}$ mark will be deducted.
2. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C or D.
3. Use only **Black/Blue ink ball point pen** to mark the answer by complete filling up of the respective bubbles.
4. Mark the answers only in the space provided. Do not make any stray mark on the OMR Sheet.
5. Write question booklet number and your roll number carefully in the specified locations of the **OMR Sheet**. Also fill appropriate bubbles.
6. Write your name (in block letter), name of the examination centre and put your signature (as is appeared in Admit Card) in appropriate boxes in the OMR Sheet.
7. The OMR Sheet is liable to become invalid if there is any mistake in filling the correct bubbles for question booklet number/roll number or if there is any discrepancy in the name/signature of the candidate, name of the examination centre. The OMR Sheet may also become invalid due to folding or putting stray marks on it or any damage to it. The consequence of such invalidation due to incorrect marking or careless handling by the candidate will be sole responsibility of candidate.
8. Candidates are not allowed to carry any written or printed material, calculator, pen, docu- pen, log table, wristwatch, any communication device like mobile phones, bluetooth devices etc. inside the examination hall. Any candidate found with such prohibited items will be **reported against** and his/her candidature will be summarily cancelled.
9. Rough work must be done on the question booklet itself. Additional blank pages are given in the question booklet for rough work.
10. Hand over the OMR Sheet to the invigilator before leaving the Examination Hall.
11. Candidates are allowed to take the Question Booklet after Examination is over.

Signature of the Candidate : _____
(as in Admit Card)

Signature of the Invigilator : _____

Applied Geology-2024



PUMDET-2024

SPACE FOR ROUGH WORK

4031200482

Subject : APPLIED GEOLOGY

(Booklet Number)



Full Marks : 100

No. of Questions : 80

Duration : 90 Minutes

INSTRUCTIONS

1. All questions are of objective type having four answer options for each. Only one option is correct. Correct answer will carry full marks 2. In case of incorrect answer or any combination of more than one answer, ½ mark will be deducted.
2. Questions must be answered on OMR sheet by darkening the appropriate bubble marked A, B, C or D.
3. Use only Black/Blue ink ball point pen to mark the answer by complete filling up of the respective bubbles.
4. Mark the answers only in the space provided. Do not make any stray mark on the OMR sheet.
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Signature of the Candidate :

(as in Admit Card)

Signature of the Invigilator :

Applied Geology

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1. Transportation of sediment grains (along river bed) through intermittent jumps is known as
 - (A) Flotation
 - (B) Attrition
 - (C) Traction
 - (D) Saltation
2. Hardness of Apatite in Mohs scale is ____
 - (A) 4
 - (B) 5
 - (C) 6
 - (D) 7
3. The youngest Era of the geological time scale is ____
 - (A) Holocene
 - (B) Pleistocene
 - (C) Cenozoic
 - (D) Phanerozoic
4. '2V' corresponds to
 - (A) A situation where two river valleys meet each other
 - (B) Rule of 'V' in a rugged topography
 - (C) Optic axial angle
 - (D) Optic axial plane



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5. Which of the following pairs of minerals is NOT an example of polymorphism ?
- (A) Calcite and Aragonite
 - (B) Diamond and Graphite
 - (C) Forsterite and Fayalite
 - (D) Quartz and Tridymite
6. Trilobites having pygidium larger than the cephalon are known as _____
- (A) Micropygous
 - (B) Subipygous
 - (C) Isopygous
 - (D) Macropygous
7. In Singhbhum Geology, which one of the following represents only sedimentary rock association ?
- (A) Kolham Group
 - (B) Dhanjori Group
 - (C) Older Metamorphic Group
 - (D) Dalma Group
8. _____ is an intrusive igneous rock composed mostly of plagioclase and alkali feldspars and contains <5% of quartz.
- (A) Gabbro
 - (B) Diorite
 - (C) Monzonite
 - (D) Syenite



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9. Which of the following is a mineral of Barrovian sequence ?
- Calcite
 - Garnet
 - Plagioclase feldspar
 - Quartz
10. Which of the following sedimentary structures is produced by bi-directional traction currents ?
- Asymmetrical ripple marks
 - Trough cross-beds
 - Climbing ripple cross-laminations
 - Herringbone cross-beds
11. Pillow lavas may be used for
- Determination of top-bottom in stratigraphy
 - Measuring heat flow from the mantle
 - Determination of colour index of rocks
 - Determination of lava temperature
12. Gossans are good indicators of _____.
- Pegmatitic deposits
 - Placer deposits
 - Residual deposits
 - Secondary sulphide deposit



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13. Index fossil is marked by
- (A) Wide geographic distribution and very limited time span
 - (B) Wide time span but very restricted geographic occurrence
 - (C) Its occurrence in Proterozoic
 - (D) Its occurrence in marine sediments
14. Perched aquifer occurs
- (A) Below the water table
 - (B) Exactly at the water table
 - (C) At bed rock
 - (D) Above the water table
15. A concordant intrusion, assuming a shape of centrally sunken dish is called
- (A) Lopolith
 - (B) Lacolith
 - (C) Phacolith
 - (D) Batholith
16. _____ marks the beginning of fluvian sedimentation in Gondwana basins.
- (A) Talchir fm
 - (B) Kasharbari fm
 - (C) Barakar fm
 - (D) Barren Measures



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17. You are examining a thin section of quartz with an optical microscope (under crossed polar condition). During 360° stage rotation, you will see that the mineral will get extinct for _____.
- (A) two times
(B) six times
(C) three times
(D) four times
18. Radula is not present in _____.
- (A) Bivalvia
(B) Cephalopoda
(C) Gastropoda
(D) Scaphopoda
19. The angle between a lineation and strike of the plane on which it is found is called the lineation's _____.
- (A) Dip
(B) Plunge
(C) Rake
(D) Throw



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20. A geological formation that is neither porous nor permeable is known as _____.
 (A) Confined Aquifer
 (B) Aquitard
 (C) Aquiclude
 (D) Aquifuge
21. The asteroid belt lies between the planets _____.
 (A) Venus and Earth
 (B) Earth and Mars
 (C) Mars and Jupiter
 (D) Jupiter and Saturn
22. The bearing capacity of rocks is based on their _____.
 (A) Strength
 (B) Porosity
 (C) Permeability
 (D) Specific gravity
23. Talchir boulder bed marks
 (A) Wind activity
 (B) Glacial activity
 (C) Riverine activity
 (D) Lacustrine activity



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24. Which of the following is a magmatic deposit ?
- Chromite
 - Gypsum
 - Montmorillonite
 - Sillimanite
25. In a stratigraphic succession, the lower unit is Gabbro whereas the upper unit is sandstone. The relevant unconformity in this case is
- Angular unconformity
 - Disconformity
 - Non conformity
 - Para conformity
26. The intergrowth of orthoclase and quartz is known as the _____
- Porphyritic texture
 - Poikilitic texture
 - Intersertal texture
 - Graphic texture
27. Which of the following minerals is commonly known as the 'peacock ore' ?
- Bornite
 - Covellite
 - Cuprite
 - Malachite



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28. _____ cannot be used to determine the top and bottom of the strata.
- (A) Mud cracks
 - (B) Ripple marks
 - (C) Graded beds
 - (D) Tracks and trails
29. Which of the following is the correct ascending order of lithostratigraphic units of the Mesozoic strata of Kachchh Basin ?
- (A) Patcham fm – Chari fm – Katrol fm – Umia fm
 - (B) Patcham fm – Katrol fm – Chari fm – Umia fm
 - (C) Katrol fm – Patcham fm – Chari fm – Umia fm
 - (D) Katrol fm – Chari fm – Patcham fm – Umia fm
30. 'Intensity' of an earthquake is a measure of the _____ earthquake.
- (A) energy released
 - (B) extent of damage caused by
 - (C) time duration of ground shaking
 - (D) focus – to – surface travel time of the P – Wave of
31. Fossilized animal feces are known as _____.
- (A) Coprolites
 - (B) Graptolites
 - (C) Corallites
 - (D) Diplichnites



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32. The stability of a/an _____ directly depends on its bulk weight.
- (A) Arch Dam
(B) Buttress Dam
(C) Gravity Dam
(D) Rock-fill Dam
33. According to Darcy's Law, the Discharge rate is
- (A) directly proportional to the gradient in hydraulic head.
(B) inversely proportional to the gradient in the hydraulic head.
(C) equal to the square root of the hydraulic head.
(D) equal to the cube root of the hydraulic head.
34. Which of the following has thin, alternating shiny and dull layers ?
- (A) Lignite
(B) Subbituminous coal
(C) Bituminous coal
(D) Anthracite
35. Uniaxial flash figure of a mineral can be obtained if the section is cut
- (A) at an angle of 45° with the optic axis.
(B) at an angle of 30° with the optic axis.
(C) perpendicular to its optic axis.
(D) parallel to its optic axis.



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36. _____ are formed by the process of glacial erosion.
- (A) Chatter marks
 - (B) Drumlins
 - (C) Erratics
 - (D) Kames
37. What type of a dam should be constructed across a narrow river valley having strong walls and relatively weak floor ?
- (A) Earth-fill dam
 - (B) Arch dam
 - (C) Buttress dam
 - (D) Gravity dam
38. Gutenberg discontinuity occurs between
- (A) Upper crust and lower crust.
 - (B) Crust and mantle.
 - (C) Upper mantle and lower mantle.
 - (D) Core and mantle.
39. Which of the following are not a result of rock deformation ?
- (A) Boudins
 - (B) Crenulation cleavage
 - (C) Columnar joints
 - (D) Breccia



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40. 'Cyclothem' may be best described as
- (A) Basalt – Gabbro association in Singhbhum
 - (B) Peridotite – pyroxenite association of Karnataka
 - (C) Sandstone – shale – coal association in Ranigunj basin
 - (D) Moho transition
41. Which of the following rocks has highest compressive strength ?
- (A) Basalt
 - (B) Coarse – grained sandstone
 - (C) Limestone
 - (D) Gneiss
42. Which of the followings is called the 'brown coal' ?
- (A) Peat
 - (B) Lignite
 - (C) Subbituminous coal
 - (D) Bituminous coal
43. Tungsten deposit in India is available at
- (A) Malti
 - (B) Chhendapathar
 - (C) Lapsaburu
 - (D) Khasi Hills



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44. Boudinage structures are associated with ____.
- (A) Folding of the strata comprising rocks of different competencies
 - (B) Folding of the strata comprising rocks of same competencies
 - (C) Faulting of the strata comprising rocks of different competencies
 - (D) Faulting of the strata comprising rocks of same competencies
45. Deflation hollows form as a result of continuous ____.
- (A) Chemical weathering
 - (B) Wind erosion
 - (C) Fluvial erosion
 - (D) Biochemical weathering
46. In India, Lignite deposit is predominantly found in
- (A) Krishna – Godavari basin
 - (B) Bombay high
 - (C) Barakar Basin
 - (D) Neyvelli



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47. The chances of slope instability are more if the discontinuity planes in rocks ____.
- (A) dip towards the hill slope
(B) dip opposite to the hill slope
(C) dip perpendicular to the hill slope
(D) are horizontal or nearly horizontal
48. The streak of chalcopyrite is ____.
- (A) Light yellow
(B) Reddish – brown
(C) Greenish – black
(D) Lead – grey
49. Extrusive equivalent of the syenite is ____.
- (A) Rhyolite
(B) Dacite
(C) Trachyte
(D) Basalt
50. Which of the following minerals is NOT of garnet family ?
- (A) Andradite
(B) Pyrope
(C) Andalusite
(D) Uvarovite

Signature of the Investigator: _____

