

Ph. D. ENTRANCE TEST (PET) 2025

Signature of Invigilator

Paper - II
Geology

Roll.
No.

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Maximum Marks: 50

No. Of Printed Pages: 8

Instruction for the Candidate:

1. This paper consists of **FIFTY (50)** multiple choice type questions. Each Question carries **ONE (1)** mark.
2. There is no Negative Marking for Wrong Answer.
3. A separate OMR Answer Sheet has been provided to answer questions. Your answers will be evaluated based on your response in the OMR Sheet only. No credit will be given for any answering made in question booklet.
4. Defective question booklet or OMR if noticed may immediately replace by the concerned invigilator.
5. Write roll number, subject code, booklet type, category and other information correctly in the OMR Sheet else your OMR Sheet will not be evaluated by machine.
6. Select most appropriate answer to the question and darken appropriate oval on the OMR answer sheet, with black / blue ball pen only. **DO NOT USE PENCIL** for darkening. In case of over writing on any answer, the same will be treated as invalid. Each question has exactly one correct answer and has four alternative responses (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
Example: (A) ● (B) ● (C) ● (D) ● where (B) is correct response.
7. Rough Work is to be done in the end of this booklet.
8. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.
9. Calculators, Log tables any other calculating devices, mobiles, slide rule, text manuals etc are **NOT** allowed in the examination hall. If any of above is seized from the candidates during examination time; he/ she will be immediately debarred from the examination and corresponding disciplinary action will be initiated by the Center Supervisor as deemed fit.
10. **DO NOT FOLD** or **TEAR** OMR Answer sheet as machine will not be able to recognize torn or folded OMR Answer sheet.
11. **You have to return the OMR Answer Sheet to the invigilator at the end of the examination compulsorily** and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet on conclusion of examination.

Paper - II
Geology

Note: This paper contains **FIFTY (50)** multiple-choice questions. Each Question carries **ONE (1)** mark.

- 01) Rapid fluctuations in water discharge, high gradient, large proportion of coarse sediment load and readily erodible banks are the characteristics of _____ stream
A) Straight
B) Anastomosing
C) Meandering
D) Braided
- 02) _____ type of deltas are produced only when the densities of the effluent water in the stream channel and that in the sea or the lake into which the water is released are of the same order.
A) Bird foot
B) Lobate
C) Cuspate
D) Gilbert
- 03) A type of cross-stratification characterized by undulating sets of cross laminae that are both concave-up and convex-up and cut gently into each other with curved erosion surfaces are identified as _____ cross stratifications.
A) Torrential
B) B Festoon
C) Hummocky
D) Trough
- 04) A tectonic boundary that defines the eastern limit of the Aravalli mobile against the Vindhyan domain is marked by _____.
A) Main boundary fault
B) Great boundary fault
C) Phulad shear zone
D) Rikhabdeo suture zone
- 05) The Pir-Panjal volcanic series of Kashmir region belongs to _____ in age.
A) Cambrian
B) Devonian
C) Triassic
D) Upper Carboniferous
- 06) The upper Paleozoic unconformity in Simla region is represented by _____.
A) Blaini boulder beds
B) Talchir boulder beds
C) Tanakki conglomerates
D) Bap boulder
- 07) The Assam-Arakan basin in north-eastern India is an example of _____ basin.
A) Foreland
B) Subduction
C) Downwarp
D) Pull-apart
- 08) A soda rich basalt in which albite or albite-oligoclase is the predominating feldspar and is characterised by the presence of perfectly developed pillow structure is identified as _____.
A) Ankaramite
B) Spilite
C) Tachylyte
D) Basanite
- 09) According to IUGS classification of plutonic igneous rocks, a special name applied to the rocks that contain more than 90% plagioclase with lesser content of mafic minerals is _____.
A) Granodiorite
B) Monzonite
C) Anorthosite
D) Tonalite
- 10) An interlocking network of small ore bearing veinlets traversing a mass of rock and occur as separate bodies or in association with other type of deposits is described as _____.
A) Saddle reefs
B) Ladder veins
C) Stock works
D) Pitches and flats
- 11) Copper mineralisation in Khetri copper belt of Rajasthan is associated with the rocks belonging to _____.
A) Delhi Super Group
B) Aravalli Super Group
C) Vindhyan Super Group
D) Banded Gneissic Complex
- 12) According to Bernoulli's equation, the term that represents the length of the water column in a well or piezometer is _____.
A) Pressure head
B) Velocity head
C) Elevation head
D) Viscosity head

- 13) _____ is a term applied to the length of the sinuous path followed by a fluid particle and is defined as the length of flow path divided by the overall length of the sample.
- Tortuosity
 - Effective porosity
 - Absolute porosity
 - Permeability
- 14) Oblique slip faults in which the opposite wall moves towards right and the hanging wall moves relatively down are categorized as _____.
- Right reverse
 - Right normal
 - Left reverse
 - Left normal.
- 15) Shear fracture boudinage structures are normally localized at the _____ region of a large fold.
- Limb
 - Hinge
 - Core
 - Enveloping surface
- 16) Structures similar to boudins occurring in certain zones of homogeneous strongly foliated rocks and having no apparent lithological contrast with the host rocks are considered as _____.
- Mullions
 - Pinch and Swell
 - Rods
 - Foliation boudins.
- 17) Cleavages in which the associated crenulations are always very open micro folds with one set of limbs much thinner than the other are considered as _____ cleavages.
- Transected
 - Zonal
 - Discrete
 - Extentional crenulation
- 18) The transition from low grade to medium and high grade metamorphism is best recognised in metapelites by the diagnostic first appearance of _____.
- Chlorite
 - Biotite
 - Staurolite
 - Actinolite
- 19) GIS modelling function that uses properties of a defined region of cells to characterize the target cell is called _____.
- Focal function
 - Zonal function
 - Spatial function
 - Block function
- 20) The process associated with high grade regional metamorphism that involves partial and complete remelting of the crustal rocks is termed as _____.
- Syntaxis
 - Anataxis
 - Diffrentiation
 - Assimilation
- 21) Signals emanating from the atmosphere collected by a remote sensor is called _____.
- Ground radiance
 - Path radiance
 - Atmospheric scattering
 - Optical thickness
- 22) The property of a medium to transmit in unit time a unit volume of groundwater at the prevailing kinematic viscosity through a cross section of an unit area is called _____.
- Hydraulic conductivity
 - Transmissivity
 - Intrinsic permeability
 - Effective porosity
- 23) In India, 43 % of the iron ore reserves are located in the states of _____ and _____.
- Gujarat and Maharashtra
 - Karnataka and Kerela
 - Bihar and Orissa
 - Rajasthan and Madhya Pradesh.
- 24) The highly evolved larger group of Nummulitideans is used as index fossils for _____ period.
- Paleocene
 - Eocene-Oligocene
 - Neogene
 - Paleogene

- 25) The soft-bodied multicellular fauna with radial-shaped symmetry and appeared in the Ediacaran period and is known as _____.
 A) Cyclomedusa
 B) Dickinsonia
 C) Spriggina
 D) Tribrachidium
- 26) _____ microfossil group is used for near-shore marine sediments for interpretations of continental climates and to monitor the current movements.
 A) Dinoflagellates and fungi
 B) Radiolaria and Foraminifera
 C) Foraminifera and ostracoda
 D) Spore and pollen
- 27) Which of the following characteristics is not true for natural levees?
 A) Marks the limits of channel
 B) Is aggraded only when flood waters spill onto the floodplain
 C) Formed due to erosion by river
 D) It slopes away from the channel
- 28) Which of the following set of landforms represents a retrograding coastline?
 A) Beach-spit-offshore bar-coastal dune
 B) Coastal dune-mudflat-coastal cliff- bay
 C) Coastal cliff-bay-pocket beach-headland
 D) Mudflats-tombolo-delta-estuary
- 29) Formation of Karst topography is favoured by
 A) Carbonate rich lithologies and humid climate
 B) Dry climate and limestone rocks
 C) Presence of joints and stratification planes
 D) Uneven topography over carbonate rocks
- 30) Which of the following statement is true for western ghat escarpment?
 A) Forms drainage divide in peninsular India
 B) Forms steep west facing escarpment
 C) Deltas occur along the coastline
 D) Dominantly consist of Deccan Trap Formation
- 31) Which of the following statements are true with regard to extinctions?
 a. Extinction of trilobites coincides with the Permian-Triassic boundary
 b. Extinction of dinosaurs does not coincide with Cretaceous-Tertiary boundary
 c. Extinction of Siwalik mammals coincided with interglacial periods
 d. Extinction of woolly mammoths coincided with last glacial age
 A) a and d are correct
 B) a, b and c are correct
 C) a and b are correct
 D) c and d are correct
- 32) Alkaline igneous complexes like the Amba Dongar complex are typically found associated with _____ settings
 A) Rift valley
 B) Mid oceanic ridge
 C) Island arcs
 D) Collisional plate margin
- 33) Which of the following ore mineral is a main source of copper?
 A) Chalcopyrite
 B) Bornite
 C) Malachite
 D) Chalcocite
- 34) Which of the following pairs of minerals are difficult to distinguish in hand specimen because both are always dark in color and almost equally hard?
 A) Muscovite and Augite
 B) Hornblende and Muscovite
 C) Hornblende and Biotite
 D) Hornblende and Augite
- 35) Hematite forms in:
 A) An alkaline oxidising environment.
 B) An acidic oxidising environment.
 C) An alkaline reducing environment.
 D) An acidic reducing environment.
- 36) Digital Terrain Models prepared by incorporating ground survey data are _____.
 A) Accurate
 B) Generalized
 C) Unreliable
 D) Not usable

- 37) A map that emphasizes a particular set of data such as the average distribution of rainfall in an area is called a _____ map.
- Thematic
 - Geomorphological
 - Geological
 - Structural
- 38) 38. In a drainage basin, the number of streams is _____ proportional to the stream order.
- Directly
 - Equally
 - Inversely
 - Not
- 39) A subsurface soil horizon that is hard due to cementation by silica and is usually found in soils of arid regions, is known as _____.
- Fragipan
 - Salic
 - Duripan
 - Argillic
- 40) Following is the list of some of the most devastating tsunami occurrences in recent times. Which one of these was caused by volcanogenic submarine slide?
- Indian ocean tsunami of 26th December, 2004
 - Indonesian tsunami of on 22 December 2018
 - Pacific ocean (off Japan) tsunami of 11 March, 2011
 - Pacific ocean tsunami of 29 July, 2025
- 41) Which of the following sets of conditions are true for a glacial period
- Static sea level
 - Increased aeolian activity
 - High precipitation
 - Increased frequency of extreme climatic fluctuations
- 42) Which of the following minerals is now most commonly used to date the oldest rocks of the earth?
- Zircon
 - Quartz
 - Lead
 - Uranium
- 43) Which of the following is not true for Thermohaline circulation in oceans?
- It explains the movement of subsurface ocean waters.
 - The movement of water is from equator to poles.
 - Downwelling occurs at poles and upwelling occurs at equator.
 - The driving force is temperature and salinity of sea water.
- 44) As per Hjulstrom's model, which of the following is not true for marine sedimentation.
- Fine grained sediments denote low energy conditions.
 - The model is applicable only to sediments deposited in ocean margins.
 - The particle size of the sediments deposited is related to average current velocity.
 - Coarse sediments are deposited in high energy conditions.
- 45) The term greensand is applied to ____ rich sands.
- Chamosite
 - Glaucinite
 - Hornblende
 - Serpentine
- 46) Radiocarbon dating can help find the age range of biological specimens no older than:
- 40,000 years
 - 100,000 years
 - 500,000 years
 - 1,000,000 years
- 47) Magnetic geophysical methods are most suitable for –
- Measuring temperature variations
 - To detect and map subsurface geological structures
 - To study atmospheric phenomena
 - To study seismic characteristics of subsurface rocks
- 48) Which of the following geophysical methods helps in fastest data collection over large areas?
- Gravity method
 - Magnetic method
 - Aeromagnetic method
 - Seismic method

- 49) What does the term 'geophysical anomaly' mean?
- A) Average of all geophysical values
 - B) Difference between highest and lowest geophysical values
 - C) Unusual variation in geophysical values
 - D) Error in geophysical measurements
- 50) Which of the following geophysical method is useful to measure the thickness of earth's crust?
- A) Seismic method
 - B) Gravity method
 - C) Magnetic method
 - D) Radiometric method

Rough Work: