

## PUMDET-2019

### Subject : APPLIED GEOLOGY

(Booklet Number)

Duration : 90 Minutes

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 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.
5. Write question booklet number and your roll number carefully in the specified locations of the OMR. Also fill appropriate bubbles.
6. Write your name (in block letter), name of the examination centre and put your full signature in appropriate boxes in the OMR.
7. The OMR 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 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 etc. inside the examination hall. Any candidate found with such items will be **reported against** and his/her candidature will be summarily cancelled.
9. Rough work must be done on the question paper itself. Additional blank pages are given in the question paper for rough work.
10. Hand over the OMR to the invigilator before leaving the Examination Hall.



APPLIED GEOLOGY

1. Which are two major constituents of the atmosphere ?
- (A)  $O_2$  and  $CO_2$  (B)  $O_2$  and  $N_2$   
(C)  $O_2$  and  $H_2$  (D)  $O_2$  and  $SO_2$
2. The two most abundant elements in the Earth's crust are
- (A) Oxygen and nitrogen (B) Oxygen and aluminium  
(C) Silicon and hydrogen (D) Oxygen and silicon
3. Vents through which only volcanic gases ejected are
- (A) Geyser (B) Crater  
(C) Fumaroles (D) None of these
4. Dip of a bed is a vector quantity because it has got
- (A) Direction (B) Magnitude  
(C) Direction and Magnitude (D) None of these
5. The line of maximum curvature in a fold is known as
- (A) Crest (B) Axis  
(C) Trough (D) Hinge
6. Which instrument is used to measure the wind velocity ?
- (A) Photometer (B) Barometer  
(C) Lysimeter (D) Anemometer

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11. Which of the following combinations of (1) igneous rock type and (2) rock texture are correct ?
- (A) (1) Volcanic (2) Phaneritic (B) (1) Volcanic (2) Coarse grained  
(C) (1) Plutonic (2) Aphanitic (D) (1) Plutonic (2) Phaneritic
12. What mineral readily breaks down into clay when it is chemically weathered ?
- (A) Quartz (B) Muscovite  
(C) Calcite (D) Feldspar
13. The volcanic igneous rock types that form from (1) mafic, (2) intermediate and (3) felsic lavas are
- (A) (1) basalt (2) diorite (3) rhyolite  
(B) (1) rhyolite (2) andesite (3) basalt  
(C) (1) andesite (2) rhyolite (3) basalt  
(D) (1) basalt (2) andesite (3) rhyolite
14. A rock made up of euhedral crystals, the texture is described as
- (A) Allotriomorphic (B) Hypidiomorphic  
(C) Panidiomorphic (D) Aphanitic
15. Divergence of the two plates occur on oceanic beds of the
- (A) Atlantic Ocean (B) Pacific Ocean  
(C) Arctic Ocean (D) Indian Ocean
16. "Gossan" is a/an
- (A) Siliceous residue (B) Calcareous residue  
(C) Ferruginous residue (D) Organic residue

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23. The type of seismic wave that has the most in common with sound waves
- (A) Rayleigh wave (B) Love wave  
(C) S-wave (D) P-wave
24. If the half-life of a radioactive isotope is 10 million years and a crystal forms containing 200 of these isotopes, how old is the crystal at the point when only 25 of the original radioactive isotopes are left in the crystal ?
- (A) 10 million years old (B) 20 million years old  
(C) 30 million years old (D) 40 million years old
25. The plunge and pitch are equal when the beds are
- (A) Horizontal (B) Inclined  
(C) Inclined at 45° (D) Vertical
26. The amount of water that flows down a river channel over some length of time is called the
- (A) Discharge (B) Stream load  
(C) Flow velocity (D) Channel capacity
27. Metamorphism produced predominantly by the hydrothermal alteration of minerals is called
- (A) Recrystallisation (B) Mylonitization  
(C) Hydrothermatism (D) Metasomatism

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33. All pyroxenes are biaxial (1) \_\_\_\_\_ except (2) \_\_\_\_\_.
- (A) (1) Negative (2) Enstatite (B) (1) Negative (2) Hypersthene  
(C) (1) Positive (2) Enstatite (D) (1) Positive (2) Hypersthene
34. The modified Mercalli scale is used to measure
- (A) The Richter magnitude of an earthquake  
(B) The moment magnitude of an earthquake  
(C) The intensity of an earthquake  
(D) The height of the surface waves during an earthquake
35. Radioactive decay causes U-238 to ultimately break down into Pb-206. In this reaction
- (A) U-238 and Pb-206 are both parent isotopes.  
(B) U-238 and Pb-206 are both daughter isotopes.  
(C) U-238 is a daughter isotope and Pb-206 is a parent isotope.  
(D) U-238 is a parent isotope and Pb-206 is a daughter isotope.
36. The Earth has a magnetic field because :
- (A) Magnetic minerals are common at temperatures above the Curie point.  
(B) It has a magnetic iron nickel core  
(C) The liquid outer core creates an electric current which induces a magnetic field.  
(D) All planets have magnetic fields when they form.
37. Which of the following is NOT a marine depositional environment ?
- (A) Beach (B) Delta  
(C) Continental Shelf (D) Alluvial fan

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45. The feature NOT PRESENT in the gastropod is the  
(A) Siphon (B) Anus  
(C) Mouth (D) Adductor muscles
46. Minerals exhibiting a constant index of refraction no matter what their orientation with respect to the light source are said to be  
(A) Triclinic (B) Monoclinic  
(C) Isotropic (D) Anisotropic
47. Which one of the following deposits was probably NOT formed as a direct consequence of the metamorphism of plant matter?  
(A) Peat (B) Lignite  
(C) Anthracite (D) Graphite
48. A concordant pluton that has domed the strata into which it has intruded is a  
(A) Batholith (B) Laccolith  
(C) Lopolith (D) Stock
49. An unconformity records  
(A) A difference in dip between overlying and underlying strata  
(B) A change in rock type from metamorphic to sedimentary  
(C) A new era between upper and lower surfaces  
(D) A break in the record of time as represented by the rocks at that locality
50. Diagenesis is most closely related in concept to  
(A) Igneous reactions (B) Lithification  
(C) Metamorphism (D) Cementation