

Test Paper : III
Test Subject : EARTH SCIENCE
Test Subject Code : K-3215

Test Booklet Serial No. : _____

OMR Sheet No. : _____

Roll No.

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(Figures as per admission card)

Name & Signature of Invigilator/s

Signature : _____

Name : _____

Paper : III
Subject : EARTH SCIENCE

Time : 2 Hours 30 Minutes

Maximum Marks : 150

Number of Pages in this Booklet : 16

Number of Questions in this Booklet : 75

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

- ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
- ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಎಪ್ಪತ್ತೈದು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರಿಷ್ಕರಿಸಿದ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರಿಷ್ಕರಿಸಲು ಕೋರಲಾಗಿದೆ.
(i) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗೆ ಪ್ರವೇಶಾಪಕ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಚ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪತ್ರಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
(ii) ಪತ್ರಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳೆ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೊಡಲೆ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪತ್ರಿಕೆಗೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ, ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.
- ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ (A), (B), (C) ಮತ್ತು (D) ಎಂದು ಗುರುತಿಸಿದ ನಾಲ್ಕು ಪರ್ಯಾಯ ಉತ್ತರಗಳಿವೆ. ನೀವು ಪ್ರಶ್ನೆಯ ಎದುರು ಸರಿಯಾದ ಉತ್ತರದ ಮೇಲೆ, ಕೆಳಗೆ ಕಾಣಿಸಿದಂತೆ ಅಂಡಾಕೃತಿಯನ್ನು ಕಪ್ಪಾಗಿಸಬೇಕು.
ಉದಾಹರಣೆ : (A) (B) (C) (D)
(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
- ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಗಳನ್ನು ಪತ್ರಿಕೆ III ಪ್ರಶ್ನೆಗಳಿಗೆ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾತ್ರವೇ ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿನ ಅಂಡಾಕೃತಿ ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪತ್ರಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗುತ್ತೀರಿ.
- ಪರಿಷ್ಕರಿಸಿದ ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರಿಷ್ಕರಿಸಿದ ಕೊಡಲೆಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರಿಷ್ಕರಿಸಿದ ನಂತರ, ಪರಿಷ್ಕರಿಸಿದ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
- ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.
- ಕ್ಯಾಲ್ಕುಲೇಟರ್ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
- ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
- ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲಿಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲಿಷ್ ಆವೃತ್ತಿಗಳಲ್ಲಿರುವುದೇ ಅಂತಿಮವೆಂದು ಪರಿಗಣಿಸಬೇಕು.

Instructions for the Candidates

- Write your roll number in the space provided on the top of this page.
- This paper consists of seventy five multiple-choice type of questions.
- At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
(i) To have access to the Question Booklet, tear off the paper seal on the edge of the cover page. Do not accept a booklet without sticker seal or open booklet.
(ii) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.
- Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the oval as indicated below on the correct response against each item.
Example : (A) (B) (C) (D)
where (C) is the correct response.
- Your responses to the question of Paper III are to be indicated in the OMR Sheet kept inside the Booklet. If you mark at any place other than in the ovals in OMR Answer Sheet, it will not be evaluated.
- Read the instructions given in OMR carefully.
- Rough Work is to be done in the end of this booklet.
- If you write your name 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, you will render yourself liable to disqualification.
- You have to return the test OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must NOT carry it with you outside the Examination Hall.
- You can take away question booklet and carbon copy of OMR Answer Sheet soon after the examination.
- Use only Blue/Black Ball point pen.
- Use of any calculator or log table etc., is prohibited.
- There is no negative marks for incorrect answers.
- In case of any discrepancy found in the Kannada translation of a question booklet the question in English version shall be taken as final.



EARTH SCIENCE
PAPER – III

Note : This paper contains **seventy-five (75)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. In a _____ drainage pattern, tributaries join the main stream pointing upstream.
(A) Barbed
(B) Complex
(C) Trellis
(D) Rectangular

2. Sediment deposits formed from the lateral migration of a meandering stream during flooding are known as _____ deposits.
(A) Levee
(B) Point bar
(C) Flood plain
(D) Channel lag

3. Match the following and choose the correct option using the code given :

- | | |
|-------------------------|--|
| 1. Disconformity | i. Non-depositional unconformity |
| 2. Non-conformity | ii. Between residual soil and underlying rocks |
| 3. Local unconformity | iii. Parallel unconformity |
| 4. Blended unconformity | iv. Heterolithic unconformity |

Code :

- | | 1 | 2 | 3 | 4 |
|-----|----------|----------|----------|----------|
| (A) | iii | iv | i | ii |
| (B) | i | ii | iii | iv |
| (C) | ii | iii | iv | i |
| (D) | iv | i | ii | iii |

4. The presence of glauconite in a sedimentary rock is indicative of a _____ environment.
(A) Continental weathering and fresh water depositional
(B) Glacial
(C) Littoral
(D) Marine

5. Cross bedding is a _____ property.
(A) Scalar
(B) Vector
(C) Planar
(D) Linear

6. Which of the following is associated with eugeosynclinal deposits ?
(A) Molasse
(B) Arkose
(C) Graywacke
(D) Flysch



7. Which of the following is the correct genetic sequence of karst landforms ?

- (A) doline → polje → uvala
- (B) uvala → doline → polje
- (C) doline → uvala → polje
- (D) uvala → polje → doline

8. Match the following and select the correct option using the code given below :

- | | |
|------------------|-------------|
| a. Ostracoda | 1. Plate |
| b. Foraminifera | 2. Spicule |
| c. Sponge | 3. Test |
| d. Echinodermata | 4. Carapace |

Code :

- | | a | b | c | d |
|-----|---|---|---|---|
| (A) | 4 | 2 | 1 | 3 |
| (B) | 4 | 3 | 2 | 1 |
| (C) | 3 | 4 | 2 | 1 |
| (D) | 3 | 2 | 1 | 4 |

9. Foraminifera and ostracoda are useful in the correlation of strata separated by distances of several kilometres and belonging to a range of environments. Ostracoda are considered more valuable than foraminifera in such cases because

- (A) Ostracoda occur in environments ranging from terrestrial to deep marine
- (B) Ostracoda are more sensitive to environmental fluctuations.
- (C) Chances of fossilization of ostracoda are better
- (D) Morphology of ostracoda is very distinctive

10. Which of the following is characteristic of the Barren Measures ?

- (A) *Cyclodendron*
- (B) *Glossopteris*
- (C) *Gangamopteris*
- (D) *Gondwanidium*

11. The index fossil of Danian in the Indian subcontinent is

- (A) *Lenticulina*
- (B) *Robilus*
- (C) *Cardita beaumonti*
- (D) *Operculina*

12. Late Maastrichtian fresh water sediments in India are represented by the _____ beds.

- (A) Bagh
- (B) Lameta
- (C) Zewan
- (D) Uttatur



13. Cenomanian transgression took place during the _____ era.

- (A) Mesozoic
- (B) Proterozoic
- (C) Cenozoic
- (D) Archaean

14. The Ajabgarh Series belongs to the _____ Supergroup.

- (A) Delhi
- (B) Cuddapah
- (C) Aravalli
- (D) Dharwar

15. _____ was the warmest epoch of the Cenozoic.

- (A) Palaeocene
- (B) Eocene
- (C) Oligocene
- (D) Miocene

16. Match the following and select the correct option using the code given below :

- | | |
|-------------------------------|--|
| a. Plunging fold surrounded | 1. A structure where the younger rocks are by the older rocks |
| b. Outlier | 2. A fold with a dipping axis |
| c. Similar fold | 3. A structure where the older rocks are surrounded by the younger rocks |
| d. Inlier throughout the fold | 4. Constant Orthogonal thickness |

Code :

	a	b	c	d
(A)	2	1	4	3
(B)	1	4	3	2
(C)	3	2	1	4
(D)	4	3	2	1

17. Which of the following refers to closely spaced joints ?

- (A) Fracture cleavage
- (B) Shear cleavage
- (C) Bedding foliation
- (D) Crenulation cleavage



18. _____ fault is circular or arcuate and bounds a circular area or a part of it.

- (A) A peripheral
- (B) An en echelon
- (C) A radial
- (D) A parallel

19. In a disconformity,

- (A) Both older and younger rocks are parallel
- (B) Younger igneous rocks lie on the eroded surface of older sedimentary rocks
- (C) Younger inclined beds lie on the eroded surface of older inclined beds
- (D) Younger horizontal beds lie on the eroded surface of older inclined beds

20. Which of the following pairs is **NOT** correctly matched ?

Mineral	Hardness
(A) Orthoclase	6
(B) Topaz	8
(C) Gypsum	2
(D) Fluorite	7

21. What is the anorthite content of andesine ?

- (A) $An_{10} - An_{30}$
- (B) $An_{30} - An_{50}$
- (C) $An_{70} - An_{90}$
- (D) $An_{90} - An_{100}$

22. _____ form continuous single chains of tetrahedra by the sharing of two oxygen atoms.

- (A) Phyllosilicates
- (B) Inosilicates
- (C) Cyclosilicates
- (D) Nesosilicates

23. Match the following and select the correct option from the code given below :

- | | |
|----------------|-----------------|
| a. Hypersthene | 1. Pearlspar |
| b. Calcite | 2. Schillarspar |
| c. Gypsum | 3. Icelandspar |
| d. Dolomite | 4. Satinspar |

Code :

- | | a | b | c | d |
|-----|----------|----------|----------|----------|
| (A) | 2 | 3 | 4 | 1 |
| (B) | 1 | 4 | 2 | 3 |
| (C) | 3 | 2 | 1 | 4 |
| (D) | 4 | 3 | 2 | 1 |



24. A mineral series showing a continuous change in composition without any significant change in the form is _____ series.
- (A) A discontinuous
(B) A Solid solution
(C) An isotypic
(D) An isostructural
25. Isotopic fractionation during precipitation involves which of the following ?
- (A) More of lighter isotopes enter the liquid phase
(B) More of heavier isotopes enter the liquid phase
(C) Less of lighter isotopes enter the liquid phase
(D) Less of heavier isotopes enter the liquid phase
26. _____ is/are the most abundant element/s in the Sun.
- (A) Hydrogen and nitrogen
(B) Helium
(C) Hydrogen and Helium
(D) Carbon and Helium
27. Aerolites are _____ meteorites.
- (A) Metallic
(B) Stony
(C) Stony-iron
(D) Iron
28. Match the following and select the option from the code given below :
- | | |
|----------------|------------------|
| 1. Atmophile | i. Metallic iron |
| 2. Lithophile | ii. Atmosphere |
| 3. Siderophile | iii. Silicates |
| 4. Chalcophile | iv. Sulphides |
- Code :**
- | | | | |
|----------|----------|----------|----------|
| 1 | 2 | 3 | 4 |
| (A) ii | iii | i | iv |
| (B) iv | iii | ii | i |
| (C) iii | iv | i | ii |
| (D) i | iii | ii | iv |
29. α -quartz, β -quartz and tridymite are examples of
- (A) dimorphism
(B) isomorphism
(C) polymorphism
(D) dimorphism and isomorphism



30. Vermicular intergrowth between quartz and plagioclase is referred to as
- (A) perthite
 - (B) myrmekite
 - (C) granophyre
 - (D) antiperthite
31. Phase diagrams are graphic representations depicting the equilibrium between the
- (A) Magmas of different composition
 - (B) Different phases and their composition
 - (C) Temperature and pressure of the magma
 - (D) Saturation of volatiles and composition of the magma
32. Which of the following is a typomorphic texture in metamorphic rocks ?
- (A) blasto-porphyratic
 - (B) blasto-peilitic
 - (C) porphyroblastic
 - (D) palimpsest
33. Spinifex texture is characteristic of
- (A) komatiite
 - (B) kimberlite
 - (C) lamprophyre
 - (D) peridotite
34. The occurrence of charnockite in any metamorphic terrain indicates the _____ facies of metamorphism.
- (A) greenschist
 - (B) granulite
 - (C) sanidinite
 - (D) eclogite
35. Olivine and quartz do not co-exist in igneous rocks because
- (A) Quartz crystallises at high temperature and olivine at low temperature
 - (B) Olivine crystallises at high temperature and quartz at low temperature
 - (C) Both olivine and quartz crystallise at high temperature
 - (D) Olivine crystallises at moderate temperature and quartz at high temperature
36. Choose the correct sequence of minerals in the Bowen's reaction series
- (A) Olivine – clinopyroxene – orthopyroxene – hornblende
 - (B) Olivine – hornblende – clinopyroxene – orthopyroxene
 - (C) Olivine – orthopyroxene – hornblende – clinopyroxene
 - (D) Olivine – orthopyroxene – clinopyroxene – hornblende



37. The characteristic assemblage of blueschist facies is
- (A) garnet – omphacite
 - (B) lawsonite – glaucophane
 - (C) garnet – hypersthene
 - (D) garnet – diopside
38. _____ is a synthetic abrasive made by the fusion of petroleum coke and silica.
- (A) Alundrum
 - (B) Carborundum
 - (C) Boron oxide
 - (D) Metallic abrasive
39. Which of the following is **NOT** correctly matched ?
- (A) magmatic process – segregation deposits
 - (B) hydrothermal process – cavity filling deposits
 - (C) weathering – placer deposits
 - (D) sedimentation – kyanite and staurolite deposits
40. Which of the following is **NOT** correctly matched ?
- (A) magnetite – Fe_3O_4
 - (B) haematite – FeO TiO_2
 - (C) limonite – $\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$
 - (D) siderite – FeCO_3
41. Chromite deposits of Nuggehalli and Sargur schist belts of Karnataka formed by
- (A) early magmatic segregation
 - (B) early magmatic dissemination
 - (C) immiscible liquid segregation
 - (D) residual gravitative liquid segregation
42. New oceanic lithosphere forms at _____ plate boundaries.
- (A) convergent
 - (B) divergent
 - (C) transform
 - (D) transcurrent
43. The rate of deep ocean circulation may be determined using
- (A) ^{226}Ra
 - (B) ^{238}U
 - (C) ^3H
 - (D) ^{235}Th



44. Anoxic sediments are not characterised by

- (A) black colour
- (B) Green colour
- (C) brown colour
- (D) H_2S odour

45. Two characteristic features of placer minerals are

- (A) high specific gravity and low susceptibility to chemical weathering
- (B) low specific gravity and low susceptibility to chemical weathering
- (C) high specific gravity and high susceptibility to chemical weathering
- (D) low specific gravity and high susceptibility to chemical weathering

46. _____ indicates an oxic environment.

- (A) High Mn^{2+} concentration in pore water
- (B) Low Mn^{2+} concentration in pore water
- (C) Black sediment colour
- (D) Presence of pyrite

47. Consider the following statements :

Assertion (A) : Clay and Shale are good cap rocks for oil reservoirs.

Reason (R) : Clay and Shale are impervious and retain oil in the reservoir.

Now select the correct option according to the code given below :

Code :

- (A) Both (A) and (R) is true but (R) is not the correct explanation of (A)
- (B) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (C) (A) is true but (R) is false
- (D) (A) is false but (R) is true

48. _____ persistently changes during coalification.

- (A) Volatile matter content
- (B) Vitrinite reflectance
- (C) Ash content
- (D) Calorific value

49. The grade of metamorphism of the Dharwar Supergroup

- (A) Increases from north to south
- (B) Increases from south to north
- (C) Increases from east to west
- (D) Decreases from east to west



50. Sedimentary rocks predominate over mafic rocks in the

- (A) Eastern Dharwar Craton
- (B) Western Dharwar Craton
- (C) Bastar Craton
- (D) Singhbhum Craton

51. _____ is / are the characteristic rock type/s of granulite facies terrains.

- (A) Pillow basalts and gneiss
- (B) Granite and amphibolite
- (C) Kyanite-sillimanite-bearing pelite
- (D) BIF and granite

52. Identify the correct statement using the code below :

- i. The western Dharwar Craton is characterised by small linear greenstone belts of high-temperature and low-pressure metamorphic rocks.
- ii. The Gattihosahalli schist belt is one of the well preserved Sargur type Supracrustal belts of Karnataka.
- iii. Plagioclase feldspar forms the core in the Rapakivi structure.
- iv. The Hiriyur formation is essentially made up of volcanic rocks.

Code :

- (A) i and ii are correct
- (B) iii and iv are correct
- (C) i, iii and iv are correct
- (D) ii and iv are correct

53. Match the following and select the correct option using the code given below :

- i. Holenarasipur schist belt
- ii. Maradihalli
- iii. Ghattihosahalli Belt
- iv. Bukkapatna granite
- 1. Spinifex texture in metaperidotite
- 2. Kyanite, staurolite
- 3. Ultramylonite Belt
- 4. Pillow lavas granite

Code :

- | | i | ii | iii | iv |
|-----|---|----|-----|----|
| (A) | 3 | 1 | 2 | 4 |
| (B) | 2 | 4 | 1 | 3 |
| (C) | 4 | 1 | 2 | 3 |
| (D) | 1 | 3 | 4 | 2 |

54. The tenor of an ore refers to the

- (A) percentage of metal in the ore
- (B) percentage of mineral in the ore
- (C) percentage of gangue in the ore
- (D) gangue minerals associated with the ore



55. Which of the following is the best reservoir rock ?

- (A) porous sandstone
- (B) permeable sandstone
- (C) fractured marble
- (D) compact clay

56. Match the following and choose the correct answer using the code given below :

- | | |
|----------------------|--------------------------|
| i. Diamond | 1. Gabbro |
| ii. Chromium | 2. Anorthosite |
| iii. Platinum | 3. Kimberlite |
| iv. Titano-magnetite | 4. Norite and peridotite |

Code :

	i	ii	iii	iv
(A)	2	1	3	4
(B)	3	2	4	1
(C)	4	1	3	2
(D)	4	3	2	1

57. A permeable water-bearing geological formation capable of yielding a copious quantity of groundwater to wells and springs is called an

- (A) aquifuge
- (B) aquifer
- (C) aquiclude
- (D) aquitard

58. A zone in which all the interstices are filled with ground water under hydrostatic pressure is known as the

- (A) capillary zone
- (B) soil water zone
- (C) saturated zone
- (D) intermediate zone

59. In the Wenner arrangement of electrodes, the distance between potential electrodes is _____ the distance between the current electrodes.

- (A) less than
- (B) greater than
- (C) the same as
- (D) neither less nor equal to

60. _____ refers to the curved portion of the roof intersecting the top of the tunnel wall.

- (A) Spring line
- (B) Crest
- (C) Hinge
- (D) Snow line



61. A mass of air or water in motion in the northern hemisphere is deflected
- (A) to its left
 - (B) to its right
 - (C) above
 - (D) below
62. The gravitational attraction of the Sun and the Moon produces
- (A) waves
 - (B) currents
 - (C) upwelling
 - (D) tides
63. Upwelling areas are **NOT** associated with high
- (A) nutrient concentration
 - (B) primary productivity
 - (C) anoxic condition
 - (D) organic matter flux
64. Choose the **Wrong** statement
- (A) Tsunamis are produced by submarine earthquakes
 - (B) Tsunamis can be felt by people aboard a vessel in the mid-ocean
 - (C) Tsunamis typically are 30 m high and travel at a speed of 900 km per hour
 - (D) Tsunamis are produced by submarine landslides
65. Which of the following is **NOT** a nutrient element in ocean water ?
- (A) iron
 - (B) phosphorus
 - (C) oxygen
 - (D) carbon
66. In vertical aerial photographs, the principal point, nadir and isocentre
- (A) coincide occasionally
 - (B) always coincide
 - (C) will not coincide
 - (D) only two of them coincide
67. The _____ wavelength band effectively brings out the land-water contrast.
- (A) 0.45-0.52 μm
 - (B) 0.52-0.59 μm
 - (C) 0.62-0.68 μm
 - (D) 0.77-0.86 μm
68. Landsat imageries are generally taken from an altitude of
- (A) 700 km
 - (B) 500 km
 - (C) 300 km
 - (D) 900 km



69. Which of the following method is best suited for ground water investigations ?

- (A) magnetic method
- (B) resistivity method
- (C) seismic method
- (D) gravity method

70. _____ method/s is/are of significance to engineers to select sites for dams and tunnels.

- (A) Gravity
- (B) Electromagnetic
- (C) Resistivity and seismic
- (D) Magnetic

71. Match the following and select the correct option using the code given :

- | | |
|--------------------------|-----------------------|
| i. Seismic method | 1. Resistivity method |
| ii. Electrical method | 2. Scintillometer |
| iii. Gravity method | 3. Gravimeter |
| iv. Radioactivity method | 4. Geophones |

Code :

- | | i | ii | iii | iv |
|-----|---|----|-----|----|
| (A) | 4 | 1 | 3 | 2 |
| (B) | 2 | 3 | 1 | 4 |
| (C) | 3 | 2 | 4 | 1 |
| (D) | 1 | 4 | 2 | 3 |

72. _____ correction is applied to magnetic field data.

- (A) Latitude
- (B) Bouguer
- (C) Terrain drift
- (D) Free-air

73. Increased CO₂ concentration in the atmosphere results in

- (A) A fall in the earth's temperature
- (B) An increase in the earth's temperature
- (C) A uniform earth's temperature
- (D) A decreased volume of sea water

74. A _____ is used to measure the relative humidity of air.

- (A) Barometer
- (B) Hydrometer
- (C) Hypsometer
- (D) Hygrometer

75. Mesohippus is a horse of _____ age.

- (A) Miocene
- (B) Cretaceous
- (C) Eocene
- (D) Oligocene



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