

# **CPET-2021**

## **Subject: Geology**

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*Moderated*

**CPET 2021****GEOLOGY**

1. A crystal face has intercepts of  $0.5a$ ,  $1b$ ,  $0.5c$ . The miller indices of face is:
  - A. 112
  - B. 211
  - C. 212
  - D. 221
2. Which one of the following crystal forms doesn't belong to Ditetragonal-bipyramidal class?
  - A. Prism of first order
  - B. Prism of second order
  - C. Prism of third order
  - D. Ditetragonal Bipyramid
3. What is the chemical composition of Jadeite?
  - A.  $\text{NaAlSi}_2\text{O}_6$
  - B.  $\text{NaAlSi}_3\text{O}_8$
  - C.  $\text{KAlSi}_3\text{O}_8$
  - D.  $\text{NaFeSi}_2\text{O}_6$
4. Which of the following mineral groups constitutes an isomorphous series?
  - A. Mica
  - B. Olivines
  - C. Silica
  - D. None of the above

5. What is the chemical composition of Zircon?

- A. ZrO
- B. ZrO<sub>2</sub>
- C. ZrSiO<sub>4</sub>
- D. ZrTiO<sub>4</sub>

6. To which group of minerals Moonstone belongs?

- A. Pyroxene
- B. Mica
- C. Silica
- D. Feldspar

7. Intergrowth texture between Orthoclase and Albite where Albite remains as host is called:

- A. Perthitic
- B. Antiperthitic
- C. Myrmekitic
- D. Graphic

8. How many sets of cleavage are present in garnets?

- A. 1
- B. 2
- C. 3
- D. 0

9. What is the birefringence of quartz?

- A. 0.009
- B. 0.09

C. 0.9

D. 0

10. Number of optic axes in isotropic substance is:

A. 2

B. 3

C. 4

D. Infinite

11. Interference colours depend upon:

A. Phase difference

B. Thickness of the section

C. Birefringence

D. All of the above

12. A biaxial mineral is said to be positive if

A. X is the acute bisectrix

B. Z is the acute bisectrix

C. Y is the acute bisectrix

D. None of the above

13. Extinction angle of mineral is the angle between

A. Brightest position and darkest position

B. The zero of the circular scale and the darkest position

C. Vibration directions of the lower and upper nicol

D. Vibration direction and crystallographic direction in a mineral section

14. Downward movement of wet soil along the slopes under the influence of gravity is called:

- A. Solifluction
- B. Mudflows
- C. Creep
- D. Subsidence

15. Which of the following emits Boric acid gas?

- A. Solfataras
- B. Mofettes
- C. Soffioni
- D. Acid fumaroles

16. The Vine-Matthews hypothesis explains the origin of

- A. Polar wandering
- B. Continental drift
- C. Sea floor magnetic anomalies
- D. Mid-oceanic ridges

17. The S-wave shadow zone implies that

- A. the core is made of Fe and Ni
- B. the outer core is liquid
- C. the inner core is solid
- D. the mantle is plastic

18. The largest delta in the World is

- A. The Ganges-Brahmaputra Delta
- B. The Nile Delta
- C. The Mississippi Delta
- D. The Niger Delta

19. Intergrowth texture between vermicular quartz and plagioclase is:

- A. Graphic
- B. Perthitic
- C. Ophitic
- D. Myrmekitic

20. Volcanic rock equivalent of Granodiorite is:

- A. Basalt
- B. Dacite
- C. Andesite
- D. Rhyolite

21. Ophitic texture is shown by which of the following rocks?

- A. Basalt
- B. Lamprophyre
- C. Granite
- D. Dolerite

22. In which type of bedding the beds are slightly oblique to the major bedding plane?

- A. Bedding
- B. Cross Bedding
- C. Torrential Bedding
- D. Graded Bedding

23. In which type of sandstone percentage of quartz is greater than 95?

- A. Quartz arenite
- B. Arkose
- C. Greywacke
- D. Marlstone

24. According to Udden-Wentworth grain size scale, diameter of granule is

- A. 2-4 mm
- B. 2-1/16 mm
- C. 64-256 mm
- D. 4-64 mm

25. Varves belong to:

- A. Deltaic deposit
- B. Glacial deposit
- C. Fluvial deposit
- D. Aolian deposit

26. Which amphibole is characteristic of blue schist metamorphic facies ?

- A. Hornblende
- B. Riebeckite
- C. Actinolite
- D. Glaucofane

27. To which metamorphic facies Leptynite belongs?

- A. Amphibolite
- B. Granulite
- C. Green schist
- D. Zeolite

28. Gibb's phase rule is stated as:

- A.  $P - F = C + 2$
- B.  $P + F = C + 2$
- C.  $F - P = C + 2$
- D.  $P + F = C - 2$

29. The structure in argillaceous rocks due to development of spotted appearance as a result of incipient crystallization of porphyroblasts is known as:

- A. Maculose
- B. Schistose
- C. Hornfelsic
- D. Porphyroblastic

30. The mineral hypersthene is plotted in ACF diagram at:

- A. "A" corner
- B. "C" corner
- C. "F" corner
- D. Centre of triangle

31. To which side of continent – ocean margin, high P/T belt occurs in paired metamorphic belt?

- A. Continent
- B. Ocean
- C. Island arc
- D. None of the above

32. A fold having limbs dipping in same direction and at equal angles is known as

- A. Isoclinal fold
- B. Similar fold
- C. Parallel fold
- D. Conjugate fold

33. A fault where maximum stress axis is vertical and intermediate and minimum stress axes are horizontal is known as

- A. Normal fault
- B. Reverse fault
- C. Strike-slip fault



D. None of the above

34. The plunge and pitch of fold axis are equal when the axial plane of fold is

A. Horizontal

B. Steeply dipping

C. Gently dipping

D. Vertical

35. A fold with two hinges is known as

A. Fan fold

B. Homocline

C. Chevron fold

D. Box fold

36. Which among the following is the only possible plunge for a lineation located on the foliation plane striking N20E and dipping 40° southeasterly.

A. 30° SE

B. 20° NW

C. 45° SE

D. 40° NW

37. Nickel ore found in Odisha is associated with

A. Iron ore deposit

B. Manganese ore deposit

C. Chromite deposit

D. Bauxite deposit

38. The largest Lead-Zinc deposit in India is

A. Agnigundla

B. Rampura-Agucha

C. Sargipali

D. Zawar

39. Widmanstätten texture is seen in

A. Hematite

B. Magnetite

C. Goethite

D. Chromite

40. Which of the following textures is shown by goethite?

A. Colloform

B. Replacement

C. Orbicular

D. Mosaic

41. Polianite is an ore of

A. Iron

B. Chromite

C. Copper

D. Manganese

42. Zinc blende is also known as

A. Zincite

B. Cerussite

C. Sphalerite

D. None of the above

43. Which of the following coals is known as Brown coal?

- A. Peat
- B. Lignite
- C. Anthracite
- D. Bituminous

44. Which of the following is the most suitable location for occurrence of Petroleum?

- A. Troughs of syncline
- B. Limbs of fold
- C. Horizontal beds
- D. Crests of anticline

45. Which of the following fossil genus is not found in Lower Gondwana Formations?

- A. Ptilophyllum
- B. Vertebraria
- C. Glossopteris
- D. Gangamopteris

46. Which one of the following gastropods show sinistral coiling pattern?

- A. Murex
- B. Conus
- C. Planorbis
- D. Cerithium

47. Which one of the following is a blind trilobite?

- A. Agnostus
- B. Phillipsia
- C. Calymene
- D. Redlichia

48. The mouth of Echinoid is surrounded by a ring of calcareous plates known as

- A. Apical Disc
- B. Periproct
- C. Peristome
- D. Gonads

49. The optimum temperature required for the formation of corals is:

- A. 10°C - 20°C
- B. < 10°C
- C. 20°C - 30°C
- D. > 30°C

50. Which of the following is exclusively siliceous in nature?

- A. Radiolarian ooze
- B. Globigerina ooze
- C. Red clay
- D. Deep sea nodules

51. The thickest succession in Cuddapah Supergroup is :

- A. Kistna group
- B. Nallamalai group
- C. Cheyair group
- D. Papaghani group

52. Which of the following is the largest occurrence of felsic magmatism?

- A. Closepet Granite
- B. Malani Igneous Suite
- C. Dhanjori Lava
- D. Dras Volcanics

53. Which of the following Epochs in Cenozoic Era has the longest time duration?

- A. Miocene
- B. Oligocene
- C. Eocene
- D. Paleocene

54. Which of the following represents correct chronostratigraphic sequence?

- A. Zone- Stage- Series-System- Erathem
- B. Series- Zone- Stage- System- Erathem
- C. Zone- Stage- System- Series- Erathem
- D. Series- System- Zone- Stage- Erathem

55. Which of the following combinations of rock and place of occurrence is correct?

- A. Komatiite - Ladakh
- B. Eclogite - Nuggihalli
- C. Nepheline syenite - Kolar
- D. Phosphorite - Jhamarkotra

56. Which of the following is the correct order of stratigraphic succession of Jurassic of Kutch?

- A. Patcham, Umia, Chari, Katrol
- B. Bhuj, Umia, Chari, Katrol
- C. Patcham, Chari, Katrol, Umia
- D. Patcham, Chari, Umia, Katrol

57. The path finder element for auriferous vein is:

- A. As
- B. Se
- C. Ag
- D. Mo

58. Geiger Muller counter is used for:

- A. Gravity prospecting
- B. Magnetic prospecting
- C. Seismic prospecting
- D. Radioactive prospecting

59. In underground mining, a tunnel excavated downwards from a level in the lode to meet the lower level is known as:

- A. Adit
- B. Winze
- C. Raise
- D. Tunnel

60. Ore reserve in F.P.S. system is estimated as:

- A. Total volume multiplied by Tonnage Factor
- B. Total volume divided by Tonnage Factor
- C. Total volume multiplied by square of Tonnage factor
- D. Total volume divided by square of Tonnage factor

61. Which of the following is used to make drill bits?

- A. Calcium carbide
- B. Tungsten carbide
- C. Nickel carbide
- D. Potassium carbide

62. Which of the following types of dam is suitable for narrow valley with strong and uniformly sloping walls?

- A. Buttress dam
- B. Gravity dam
- C. Cofferdam

D. Arch dam

63. Poisson's ratio is defined as ratio between:

A. Lateral and longitudinal strain

B. Longitudinal and lateral strain

C. Compressive and Tensile stress

D. Tensile and Compressive stress

64. The sum of Specific yield and Specific retention is:

A. Porosity

B. Effective porosity

C. Permeability

D. Transmissivity

65. The maximum value of pH of water is:

A. 7

B. 14

C. 10

D. 16

66. In the equation,  $T$  (Transmissivity) =  $Kb$ , what does  $K$  denote?

A. Storativity

B. Specific yield

C. Hydraulic conductivity

D. Specific retention

67. The mid-point between Nadir and Principal point of an aerial photograph is called:

- A. Iso-centre
- B. Centre Point
- C. Iso-point
- D. All of the above

68. In which type of aerial photos, horizon can be seen?

- A. Low-oblique
- B. Vertical
- C. High-oblique
- D. All of the above

69. Which type of scattering creates Haze in photos?

- A. Mie
- B. Non-selective
- C. Rayleigh
- D. All of the above

70. In a False Colour Composite, the colour of vegetation is represented as:

- A. Green
  - B. Blue
  - C. Black
  - D. Red
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