

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: Geology

Paper name: Economic & Applied Geology

Paper No: VII

Semester: 4th semester

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A. Multiple choice questions [75 (15 from each unit)]

1. The term "ore" includes
 - a) ore minerals only
 - b) gangue minerals only
 - c) ore minerals and gangue minerals both
 - d) gangue and tenor
2. Contact metasomatism is also known as
 - a) orthotectic
 - b) pyrometasomatism
 - c) orthomagmatic
 - d) none of the above
3. The metasomatic deposits are usually resulted in
 - a) calcareous rock
 - b) arenaceous rock
 - c) ferruginous rocks
 - d) siliceous rocks
4. Hydrothermal deposits are mostly
 - a) syngenetic
 - b) epigenetic
 - c) residual
 - d) placer
5. Xenothermal deposits are characterized by
 - a) high initial temperature
 - b) shallow depth formation
 - c) rapid cooling
 - d) all of the above
6. Cavities in the vein left unfilled are called
 - a) crusification
 - b) vugs
 - c) comb structure
 - d) none of these
7. Masses of country-rocks enclosed within the fissures vein deposits are known as
 - a) vugs

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- b) ribbon structure
 - c) horses
 - d) pinches
8. Stockworks are
- a) mineralization along the crests of anticlines
 - b) transverse and roughly parallel fractures filled with the ore
 - c) an interlacing network of small ore-bearing veinlets
 - d) small wedge-shaped fissures filled with the ores
9. Solution cavity fillings occur most commonly in
- a) granite rocks
 - b) limestone rocks
 - c) conglomerate rocks
 - d) vesicular basalts
10. metasomatic replacement deposits are characterized by
- a) preservation of rock structure
 - b) presence of pseudomorphs of replacing minerals after the replaced one
 - c) absence of crustification
 - d) all of the above
11. Ore shoots are most characteristic of
- a) fissure veins only
 - b) replacement loads only
 - c) fissure veins and replacement loads
 - d) breccias-filling deposits
12. Most of metal enrichment result due to
- a) removal of the gangue components
 - b) chemical migration
 - c) redeposition
 - d) all of the above
13. The bottom of the enrichment zone is
- a) highly irregular
 - b) smooth
 - c) gently curved
 - d) plain
14. Deep depth of oxidation zone indicates
- a) absence of groundwater
 - b) presence of more sulphides
 - c) deep fracture zones
 - d) non-availability of metals at shallow depth
15. Supergene sulphide enrichment zone is found

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- a) above the water table
 - b) below the water table
 - c) near the ground surface
 - d) in oxidizing zone
16. Gossan is a
- a) ferruginous residue
 - b) siliceous residue
 - c) calcareous residue
 - d) organic residue
17. Which of the following characterized all oxidized zones
- a) laterite
 - b) pyrite
 - c) chalcocite
 - d) limonite
18. The strain at a point is
- a) scalar
 - b) vector
 - c) tensor
 - d) none of these
19. What types of river are most suitable for construction of dams
- a) influent
 - b) effluent
 - c) insulated
 - d) all of the above
20. Narmada Sagar dam is being constructed in
- a) Gujarat
 - b) Madhya Pradesh
 - c) Maharashtra
 - d) Punjab
21. The elementary profile of a dam is
- a) trapezoidal
 - b) a right angled triangle
 - c) a rectangle
 - d) none of the above
22. The water stored in the reservoir below the minimum pool level is called
- a) valley storage
 - b) useful storage
 - c) dead storage
 - d) none of the above

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23. An arch dam is suitable in
 - a) wide river valley
 - b) narrow river
 - c) both a and b
 - d) none of the above

24. Pressure tunnels are also known as
 - a) hydropower tunnels
 - b) discharge tunnels
 - c) diversion tunnels
 - d) inversion tunnels

25. Generally aerial photograph are taken
 - a) horizontally
 - b) vertically
 - c) at an angle of 45°
 - d) at an angle of 60°

26. The overlapping between two adjacent photos in a run is approximately
 - a) 30%
 - b) 45%
 - c) 60%
 - d) 75%

27. Drift and crab, generally occur due to
 - a) wind currents
 - b) fault in the lens
 - c) tilt in the aircraft
 - d) inclined photography

28. What is/are the measuring instrument/s used in photogeology
 - a) parallax bar
 - b) parallax ladder
 - c) stereometers
 - d) all of the above

29. The distance between the principal point and the conjugate point is
 - a) photo-base
 - b) air-base
 - c) focal length
 - d) flight-base

30. The side lapping between adjacent runs is
 - a) 10%
 - b) 20%
 - c) 25%
 - d) 30%

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31. The opening in the mine which serves as a means of entry is known as
 - a) shafts
 - b) adits
 - c) cross cut
 - d) stope

32. The width of the ore body which can be economically mined is
 - a) stoping width
 - b) assay width
 - c) actual width
 - d) grade width

33. Minimum metal percentage at which mining is profitable is known as
 - a) average grade
 - b) cut off grade
 - c) mill grade
 - d) economical grade

34. Drift mining is generally employed for
 - a) underground mining
 - b) coal mining
 - c) in exploitation of placers
 - d) in exploitation of copper ore

35. Horizontal mining for coal winning is more suitable where the coal seam are
 - a) horizontal
 - b) highly disturbed
 - c) slightly dipping
 - d) are found above the earth's surface

36. Coning and quatering is a mining method employed
 - a) in unconsolidated rock
 - b) for diamond mining
 - c) for laboratory sample
 - d) none of the above

37. Channel sampling of coal is
 - a) parallel to the ore body
 - b) oblique to the ore body
 - c) across the ore body
 - d) any direction in the ore body

38. The lines joining points of equal vertical thickness in a bed is known as
 - a) isopaches
 - b) isothicks
 - c) contours
 - d) isochores

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39. The lines joining points of equal elevation is known as
- contours
 - isochones
 - isopets
 - stratum contours
40. Drift in mining terminology means
- same as tunnel
 - same as adit
 - a horizontal tunnel parallel to the strike of the lode
 - all of the above
41. Longwall method is generally employed for
- copper ore mining
 - iron ore mining
 - coal mining
 - gypsum mining
42. Long wall method is
- applicable to thin coal seams
 - applied to deep mining
 - applicable to thick coal seams
 - applied to very deep and thick coal seam
43. Stripe mining is a method of
- underground mining
 - opencast mining with a high degree of mechanisation
 - horizon mining
 - longwall mining
44. A horizontal tunnel parallel to the strike of the lode or vein is termed as
- cross cit
 - adit
 - raise
 - drive
45. Grab sampling consists in picking pieces of
- ore at one place only
 - at random places
 - coal only
 - ore in a grid fashion
46. Find the odd ones out
- telluric method
 - gravity method
 - magnetic method

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- d) resistivity method
47. The Bouguer anomaly over an isostatically compensated region is
- zero
 - positive
 - negative
 - same as isostatic anomaly
48. Hammer's chart is used for
- free air correction for gravity
 - gravity interpretation
 - resistivity data interpretation
 - terrain correction
49. The maximum amplitude and variation in acceleration due to gravity due to tidal effect is
- 0.3 gal
 - 0.03 gal
 - 0.3 mgal
 - 0.03 mgal
50. Which exploration data has Milligals as unit
- magnetic
 - radioactive
 - seismic
 - gravity
51. Which deposits can be explored by gravity survey
- gold
 - chromite
 - bauxite
 - graphite
52. Which one has the highest resistivity
- sandstone
 - fresh water
 - sea water
 - sea ice
53. Which of the following logging method is not used to determine porosity
- sonic
 - SP
 - neutron
 - gamma-gamma
54. Electromagnetic surveys are carried out at frequencies
- above 100KHz
 - below 50KHz

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- c) below 60KHz
 - d) above 80KHz
55. In which one of the following configuration the electrode are uniformly spaced
- a) Schlumberger array
 - b) Pole-dipole array
 - c) Wener array
 - d) Pole-pole array
56. The physical properties used in magnetic prospecting is
- a) magnetic induction
 - b) magnetic permeability
 - c) magnetic susceptibility
 - d) magnetic potential
57. Magnetic anomaly at the crest of MOR is
- a) positive
 - b) negative
 - c) varies from positive to negative
 - d) zero
58. The magnitude of SP anomaly over a massive ore body is
- a) a few millivolts
 - b) a few tens of millivolts
 - c) a few hundreds of millivolts
 - d) a few volts
59. The unit of flux density is
- a) tesla
 - b) newton
 - c) coulomb
 - d) N/m
60. The unit of magnetic intensity is equivalent to
- a) 1 Gauss
 - b) 10 Gauss
 - c) 1.2 Gauss
 - d) 0.6 Gauss
61. Flow lines are:
- a) At right angles to the tangent of the equipotential lines
 - b) Parallel to the equipotential lines
 - c) Oblique to the equipotential lines
 - d) None of these
62. Perched aquifer occurs:

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- a) In zone of saturation
 - b) In zone of aeration
 - c) In phreatic zone
 - d) Below water table
63. Recharged area is:
- a) A region supplying water to a confined aquifer
 - b) A region supplying water to a unconfined aquifer
 - c) A region supplying water to a perched aquifer
 - d) None of these
64. Streams which contribute water to the aquifer is known as:
- a) Influent
 - b) Effluent
 - c) Insulated
 - d) None of these
65. Perennial streams in non-rainy period behave as:
- a) Influent streams
 - b) Insulated streams
 - c) Effluent streams
 - d) All the three
66. When a permeable strata is overlain or underlain by any aquitard, then it is known as:
- a) Unconfined aquifer
 - b) Confined aquifer
 - c) Perched aquifer
 - d) Leaky aquifer
67. An idealized aquifer should be:
- a) Homogeneous
 - b) Isotropic
 - c) Homogeneous and isotropic
 - d) Homogeneous and anisotropic
68. Storage coefficient equals specific yield in the case of :
- a) Confined aquifer
 - b) unconfined aquifer
 - c) Both confined and unconfined aquifers
 - d) Artesian aquifer
69. Hot springs are known as:
- a) Mudpots
 - b) Fumaroles
 - c) Geysers
 - d) Non of these

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70. Which of the following form good aquifers:
- Weathered granites
 - Phyllite
 - Shale
 - Gravel
71. In the case of confined aquifers, the ground water flow lines are:
- Terminating at the water table
 - Parallel to the impermeable confining beds
 - Perpendicular to the impermeable confining beds
 - Inclined to the impermeable confining beds
72. The water table fluctuation shows:
- Gain to groundwater storages
 - Losses to groundwater storages
 - Flow direction of groundwater
 - Both gain and losses to groundwater storages
73. Piezometric surfaces are much smoother as compared to water table, the statement is:
- True
 - False
 - Doubtful
 - Partly true, partly false
74. Groundwater flow map is also known as :
- Isopach map
 - Isocontour map
 - Potentiometric map
 - Hydraulic map
75. "Intrinsic" permeability depends upon the :
- Fluid properties only
 - Properties of material in medium only
 - Both fluid and medium properties
 - None of these

B. Fill up the blanks [15 (3 from each unit)]

- An exceptionally rich shoot or bunch of ore is called _____
- _____ deposits is below epithermal deposits
- _____ is the metal content of an ore
- Horizontal offsets in stream course are indicative of _____
- Sensors are used for _____
- Radar is an example of _____
- Radiometers is an _____ sensor
- Salting of an ore is done by _____ common salt

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9. _____ are lines joining equal true thickness of the bed
10. Porosity is mostly determined by _____ log
11. With increase in API gravity of oil in a reservoir, the seismic wave velocity _____
12. Snell's law of refraction deals with _____ of refracted waves
13. The value of gravity is minimum at the _____
14. Gravity dam has _____ shaped
15. Beds dipping _____ the down flow is good for dam construction

Key Answers

A. Multiple choice questions [replace x]

- | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|
| 1. c) | 2. b) | 3. a) | 4. b) | 5. d) | 6. b) | 7. c) |
| 8. c) | 9. b) | 10. d) | 11. c) | 12. d) | 13. a) | 14. c) |
| 15. b) | 16. a) | 17. d) | 18. c) | 19. b) | 20. b) | 21. b) |
| 22. c) | 23. b) | 24. a) | 25. c) | 26. c) | 27. a) | 28. d) |
| 29. a) | 30. d) | 31. a) | 32. a) | 33. b) | 34. c) | 35. d) |
| 36. c) | 37. c) | 38. d) | 39. b) | 40. c) | 41. c) | 42. a) |
| 43. b) | 44. d) | 45. b) | 46. d) | 47. c) | 48. d) | 49. c) |
| 50. d) | 51. b) | 52. a) | 53. b) | 54. b) | 55. c) | 56. d) |
| 57. a) | 58. c) | 59. a) | 60. c) | 61. a) | 62. b) | 63. a) |
| 63. a) | 65. c) | 66. d) | 67. c) | 68. b) | 68. c) | 70. d) |
| 71. b) | 72. d) | 73. a) | 74. c) | 75. b) | | |

B. Fill up the blanks [replace x]

1. bonanza
2. mesothermal deposits
3. tenor
4. faults
5. observations
6. passive
7. passive
8. addition
9. isopach
10. density
11. decreases
12. direction
13. equator
14. triangular
15. against