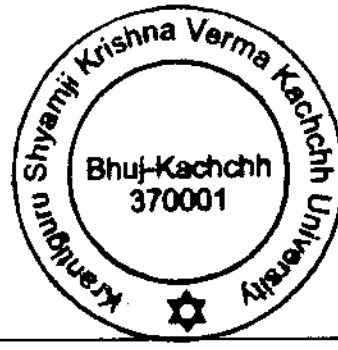


PHDKU18



Subject Code : **19-Geology**

તમને કહેવામાં ન આવે ત્યાં સુધી પ્રશ્નપુસ્તિકા ખોલવી નહીં.
Do not open the Question Booklet until ask to do so.



A

Booklet Sr. No.
1770527

A

ઉમેદવારનું નામ :

Candidates Name :

ઉમેદવારનો સીટ નંબર

ઉમેદવારની સહી

ખંડ નિરીક્ષકની સહી

સમય : 60 મિનિટ

કુલ પ્રશ્નો : 50

કુલ ગુણ : 100

ઉમેદવારોને સૂચના

(1) આ પ્રશ્નપુસ્તિકામાં પ્રશ્ન ક્રમાંક 1-50 સુધી કુલ 50 પ્રશ્નો છે. પ્રત્યેક પ્રશ્નનો ઉત્તર (1), (2), (3) અને (4) પૈકી કોઈ એક છે. પ્રશ્નની સાથે જ ચારેય વિકલ્પો આપવામાં આવેલ છે. તમારે બધા જ પ્રશ્નોના ઉત્તર આપવાના છે. તમારે આ સાથે અલગ આપેલ ઉત્તરવહી (OMR SHEET)માં જ ઉત્તર આપવાના છે.

ઉદાહરણ તરીકે :

ભારતનું કયું રાજ્ય સૌથી લાંબો દરિયા-કિનારો ધરાવે છે ?

- (1) મહારાષ્ટ્ર (2) તામિલનાડુ
(3) ગુજરાત (4) આંધ્રપ્રદેશ

જવાબવહી (Answer Sheet)માં

① ② ● ④

ઉપર્યુક્ત ઉદાહરણમાં સાચો જવાબ '3' છે. આથી '3'નું વર્તુળ કાળું (encode) કરેલ છે. ઉમેદવારોએ જવાબમાં "ગુજરાત" લખવું નહીં.

- (2) પ્રત્યેક પ્રશ્નના સાચા જવાબ માટે (2)બે ગુણ છે.
(3) આ પ્રશ્નપુસ્તિકામાં તમારે કશું જ લખવાનું નથી.
(4) સમય પૂર્ણ થયે પ્રશ્નપુસ્તિકા અને OMR ઉત્તરપત્ર સુપરવાઈઝરને પરત સોંપી દેવું.
(5) કસોટીની સમય મર્યાદા 60 મિનિટ છે.
(6) ઉમેદવારે વાદળી / કાળી બોલપોઈન્ટ પેનથી ઉત્તરો લખવાના છે. અન્ય શાહી, પેન કે પેન્સિલનો ઉપયોગ કરી શકાશે નહીં.

Instructions to Candidates

(1) In this Test Booklet, there are Ques. No. 1-50, total 50 questions. The answer of each is any one out of (1), (2), (3) and (4). Four alternatives are given with the question. You have to answer all the questions. You have to answer on the OMR Sheet given separately to you.

For example :

Which state of India has the longest sea coast ?

- (1) Maharashtra (2) Tamilnadu
(3) Gujarat (4) Andra Pradesh

In answer sheet :

① ② ● ④

In the above example, the true answer is '3'. Hence, the circle of '3' is blackened (encoded) candidates should not write 'Gujarat' in the answer.

- (2) Each correct answer carries (2)Two marks.
(3) Do not write anything in this question paper.
(4) Hand over Test Booklet and OMR Answer sheet to supervisor, after examination is over.
(5) Time limit for this test is 60 minutes.
(6) Use blue/black ball point pen for filling responses in Answer Sheet. Any other ink, pen or Pencil is strictly prohibited.

પરીક્ષા પૂરી થયા બાદ પ્રશ્નપુસ્તિકા તથા OMR ઉત્તરવહી વર્ગ નિરીક્ષકને પરત કર્યા બાદ જ વર્ગખંડ છોડવાનો રહેશે.
તેમ કરવામાં કસૂર થયેથી શિસ્તભંગનાં પગલાં ગણી પરીક્ષા માટે જે તે ઉમેદવારને ગેરલાયક ઠરાવવામાં આવશે.

- 1 Which of the following is the best example of 'defect' or 'omission solid solution' ?
- (1) Topaz (2) Plagioclase
(3) Pyrrhotite (4) Pyroxene
- 2 Which of the following pairs of minerals crystallizes in the same crystal system ?
- (1) Calcite-Aragonite
(2) Orthoclase-Microcline
(3) Gypsum-Anhydrite
(4) None of the above
- 3 Which of the following sediment types has the highest permeability.
- (1) Mud
(2) Mixture of sand and mud
(3) Well sorted sand
(4) Poorly sorted sand
- 4 The Dynamothermal metamorphism is a _____ metamorphism.
- (1) Pre-Tectonic (2) Post Tectonic
(3) Syn Tectonic (4) None of the above
- 5 Choose the correct option based on the following two statements :
- (A) Fractional crystallization of feldspar in felsic magma leads to depletion of Eu in the melt
(B) Eu in 2^+ state is a compatible element in plagioclase-felsic melt system
- (1) Both (A) and (B) are correct
(2) (A) is correct but (B) is incorrect
(3) Both (A) and (B) are incorrect
(4) (A) is incorrect but (B) is correct

- 6 In "flexures" the inter-limb angle lies between
- (1) $180^\circ - 120^\circ$ (2) $120^\circ - 70^\circ$
 (3) $70^\circ - 30^\circ$ (4) $30^\circ - 0^\circ$

- 7 Match the following and choose the correct answer :

Type of Granitoids		Mode of Derivation	
A.	A-type granitoids	1.	By emplacement into non-orogenic settings
B.	M-type granitoids	2.	From melting of subducted oceanic crust
C.	S-type granitoids	3.	From igneous or meta-igneous rocks
D.	I-type granitoids	4.	Sources that undergone atleast one weathering cycle
(1)	A-1, B-2, C-4, D-3	(2)	A-2, B-4, C-1, D-3
(3)	A-1, B-3, C-2, D-4	(4)	A-4, B-3, C-1, D-2

- 8 Match the names listed in Group I with its attributes listed in Group II.

Group I		Group II	
P.	Carlsberg Ridge	1.	Aseismic
Q.	Ninetyeast Ridge	2.	Subduction
R.	Pranhita – Godavari Basin	3.	Spreading
S.	Makran Coasr	4.	Transform
		5.	Rift
(1)	P-5; Q-3; R-1; S-4	(2)	P-3; Q-1; R-5; S-2
(3)	P-3; Q-4; R-1; S-2	(4)	P-1; Q-3; R-5; S-4

- 9 A planar flattening fabric, such as slaty cleavage, schistosity or gneissosity lies in _____ plane of strain ellipsoid.
- (1) XY (2) XZ
 (3) YZ (4) Any of the above

- 10 What is the characteristic extinction of garnet under the microscope ?
- (1) 0° extinction angle (2) 15° extinction angle
 (3) 30° extinction angle (4) Isotropic

- 11 Taphonomy is the science dealing with
- (1) Study of the conditions of burial of fossils
 - (2) Reconstruction of palaeo-environments by means of fossils
 - (3) Modes of preservation of fossils
 - (4) Study of fossil pores and spores
- 12 The simplest grade of organization in sponges is described as
- (1) Sycon
 - (2) Leucon
 - (3) Rhagon
 - (4) Ascon
- 13 The hypothesis that life on earth plays an important role in regulating the planetary climate is known as
- (1) Gaia hypothesis
 - (2) Harry Hess hypothesis
 - (3) Gutenberg hypothesis
 - (4) Horton hypothesis
- 14 Sorting of particles is best in
- (1) fluvial sediment
 - (2) sand dunes
 - (3) beach sediment
 - (4) loess sediment
- 15 Match list I with list II and select the correct answer using the code given below the lists :

List I

List II

- | | |
|---|------------------|
| A. Sediments derived from the erosion of land outside the basin of deposition | 1. Allochemical |
| B. Sediments precipitated from the solution and then moved into the basin | 2. Orthochemical |
| C. Sediments produced chemically within the basin with no evidence of transport | 3. Paralic |
| D. A lacustrine environment affected by marine conditions | 4. Terrigenous |

Code:

- | | A | B | C | D |
|-----|---|---|---|---|
| (1) | 3 | 1 | 2 | 4 |
| (2) | 4 | 2 | 1 | 3 |
| (3) | 3 | 2 | 1 | 4 |
| (4) | 4 | 1 | 2 | 3 |

- 16 The correlation of Precambrian terranes is mostly based on
- (1) Lithology
 - (2) Fossil
 - (3) Crustal Upliftment
 - (4) Eustatic Changes
- 17 In the list are given names of geomorphic features. Suggest which of the following is correct as the list of agents of their formation :
- List : demoiselles, poljes, bajada, corrie.
- Sequences :
- (1) wind, groundwater, river, glacier
 - (2) groundwater, wind, river, glacier
 - (3) wind, glacier, river, groundwater
 - (4) groundwater, glacier, river, wind
- 18 The basin and ranges topography is an effect of a
- (1) Folding
 - (2) Faulting
 - (3) Jointing
 - (4) All of the above
- 19 The mammoths lived in all continents except
- (1) Africa
 - (2) Asia
 - (3) North America
 - (4) South America
- 20 Sediments which are formed by slow precipitation of minerals from sea water in place by crystallisation, are called as
- (1) Terrigenous marine sediments
 - (2) Pelagic marine sediments
 - (3) Authigenic marine sediments
 - (4) None of these

- 21 According to Koppen's climate classification, AW is
- (1) tropical desert climate
 - (2) tropical steppe climate
 - (3) tropical dry-summer climate
 - (4) tropical savanna climate
- 22 The salinity of seawater can be determined by the ratio of
- (1) Na/K
 - (2) Ca/Na
 - (3) C/C
 - (4) Rb/Sr
- 23 The depth of the water can be determined by
- (1) He method
 - (2) C¹⁴ method
 - (3) Salinity – Temperature diagram
 - (4) None of the above
- 24 Which one of the following is a fundamental requisite in any stratigraphic work ?
- (1) The mineral contents in the rock
 - (2) The tectonic set up in the rock sequence
 - (3) The order of superposition of strata
 - (4) Lateral continuity in the rocks
- 25 Which of the following is the correct order of elemental abundance in the universe
- (1) H₂ > He > Ne > O > N₂
 - (2) H₂ > He > O > N₂ > Ne
 - (3) H₂ > He > O > Ne > N₂
 - (4) H₂ > He > N₂ > O > Ne

- 26 Chondrites are consisting primarily of
- (1) Olivine only
 - (2) Pyroxene only
 - (3) Iron and Nickel
 - (4) Olivine and/or pyroxene
- 27 Radiocarbon, used for dating sediments, is produced at the top of the Earth's atmosphere by the
- (1) Primary cosmic ray protons reacting with atmospheric carbon dioxide
 - (2) Primary cosmic ray protons reacting with atmospheric nitrogen
 - (3) Reaction of secondary neutrons with atmospheric oxygen
 - (4) Reaction of secondary neutrons with atmospheric nitrogen
- 28 A map is prepared on 1:50,000 scale. How many cm on the map represents 1.0 km on the ground.
- | | |
|-------|-------|
| (1) 1 | (2) 2 |
| (3) 3 | (4) 4 |
- 29 Which of the following tectonic features is a consequence of continent-continent collision.
- | | |
|---------------------|------------------------|
| (1) Mariana trench | (2) Mid-Atlantic Ridge |
| (3) Andes Mountains | (4) Himalaya |
- 30 The linear flow of infiltration was given by
- | | |
|----------------------|-----------|
| (1) H. Darcy | (2) White |
| (3) Charles Linnaeus | (4) Weber |

- 31 Deeply confined aquifers can be recharged by means of
- (1) Water Spreading
 - (2) Inverted Wells
 - (3) Pits and Shafts
 - (4) Induced Recharge
- 32 Arrange the following in the decreasing order of their Age
- I. Dras Volcanics
 - II. Panjal Volcanics
 - III. Malani Volcanics
 - IV. Pitepani Volcanics
- (1) I, II, III, IV
 - (2) IV, III, II, I
 - (3) I, III, II, IV
 - (4) II, III, IV, I
- 33 Which of the following faults demarcates the boundary between the Siwalik group of rocks and the Lesser Himalayas ?
- (1) Main boundary fault
 - (2) Great boundary fault
 - (3) Himalayan frontal fault
 - (4) Main central thrust
- 34 The 'Schlumberger Configuration' is used in
- (1) Electric Profiling
 - (2) Magnetic Profiling
 - (3) Geomagnetic Profiling
 - (4) Seismic Profiling
- 35 The P-wave velocities are highest in
- (1) Air
 - (2) Water
 - (3) Sand
 - (4) Granite

36 Consider the following statements, associated with Malanjkhand copper deposit in India :

1. Richest copper deposit in India.
2. It is a sedimentary copper deposit.
3. Molybdenum, gold and silver can be recovered from this copper deposit.
4. Copper confined in quartzites.

Which of these statements are correct ?

- (1) 1, 2 and 3 (2) 1, 3 and 4
(3) 2, 3 and 4 (4) 2 and 4 only

37 Match the following and choose the correct answer :

Basin	Type
A. Cambay Basin	1. Offshore and Onshore
B. Bombay High	2. Onshore
C. Krishna – Godavari Basin	3. Offshore
D. Bengal Basin	

(1) A-2, B-3, C-3, D-1 (2) A-2, B-3, C-1, D-1
(3) A-3, B-3, C-2, D-1 (4) A-2, B-1, C-1, D-2

38 Which of the following is essential for chemical weathering ?

- (1) Temperature (2) Precipitation
(3) Pressure (4) Mass Movement

39 Biogeochemical method of exploration includes the :

- (1) Chemical analysis of elements in vegetation.
- (2) Chemical analysis of underlying soils.
- (3) Chemical analysis of elements in vegetation and its underlying soils.
- (4) Analysis of biological characters of the soil.

40 Remote sensing can be as basic as

- (1) putting cameras on camels (2) putting cameras on airplanes
(3) TV remotes (4) putting sensors on satellites

- 41 GIS deals with which kind of data
- (1) Numeric Data
 - (2) Binary Data
 - (3) Spatial Data
 - (4) Complex Data
- 42 Lines connecting areas of equal air pressure are called
- (1) Isotherms
 - (2) Isotachs
 - (3) Isallobars
 - (4) Isobars
- 43 Which of the following statements is false ?
- (1) Water evaporates when air is cooled to its dew point.
 - (2) Frost is likely if the air is cooled to its (below freezing) dew point.
 - (3) The dew point increases as precipitation evaporates into the air.
 - (4) A high value of relative humidity implies a low temperature-dew point spread.
- 44 'Grouting' may be described as :
- (1) A process of determining the coefficient or water saturation of a material.
 - (2) The injection of suitable material into the earth's crust to seal any open fissures.
 - (3) A process of lining of tunnels to support the pressure exerted by the material in which the tunnel is excavated.
 - (4) None of the above.
- 45 According to the Hooper's classification of ore reserves, the term 'Possible Reserve' implies.
- (1) a geologically identified ore body
 - (2) a geologically presumed ore body
 - (3) a tentatively calculated reserve
 - (4) a suspected reserve

- 46 "Swarms" are minor earthquakes which are mostly of :
- (1) Shallow focus (2) Intermediate focus
(3) Deep focus (4) A combination of the above
- 47 Which of the following mineral properties can not be seen between crossed polars ?
- (1) Cleavage (2) Pleochroism
(3) Inclusions (4) Twining
- 48 Low angle normal faults are called
- (1) Thrust (2) Shear Zones
(3) Listric Faults (4) Lags
- 49 The correct order of decreasing stability of minerals during chemical weathering is :
- (1) quartz, feldspar, pyroxene, olivine
(2) quartz, pyroxene, feldspar, olivine
(3) quartz, pyroxene, olivine, feldspar
(4) feldspar, olivine, amphibole, pyroxene
- 50 Which one of the following is detrimental to summer monsoon strength over India ?
- (1) Northward movement of upper level westerly jet stream
(2) Strengthened Mascarene high
(3) Strengthened easterly jet stream
(4) Shift of Tibetan anticyclone to the west of its mean position



