

(To be filled up by the candidate by blue/black ball-point pen)

Roll No.

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Roll No.

(Write the digits in words) .....

Serial No. of OMR Answer Sheet .....

Day and Date .....

(Signature of Invigilator)

**INSTRUCTIONS TO CANDIDATES**

(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope.*
3. A separate Answer Sheet is given. *It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.*
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. **On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.**
6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and also Roll No. and OMR Sheet No. on the Question Booklet.
7. Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
8. Each question in this Booklet is followed by four alternative answers. *For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by ball-point pen as mentioned in the guidelines given on the first page of the Answer Sheet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero mark).*
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit *only the OMR Answer Sheet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.



15P/205/2

**No. of Questions/प्रश्नों की संख्या : 150**

**Time/समय : 2 Hours/घण्टे**

**Full Marks/पूर्णांक : 450**

**Note :** (1) Attempt as many questions as you can. Each question carries 3 marks. One mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.

अधिकाधिक प्रश्नों को हल करने का प्रयत्न करें। प्रत्येक प्रश्न 3 अंक का है। प्रत्येक गलत उत्तर के लिए एक अंक काटा जाएगा। प्रत्येक अनुत्तरित प्रश्न का प्राप्तांक शून्य होगा।

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

यदि एकताधिक वैकल्पिक उत्तर सही उत्तर के निकट प्रतीत हों, तो निकटतम सही उत्तर दें।

1. The incorrectly matched pair among the following

- |                               |                               |
|-------------------------------|-------------------------------|
| (1) nesosilicates—forsterite  | (2) cyclosilicates—talc       |
| (3) phyllosilicates—muscovite | (4) tectosilicates—orthoclase |

2. Which of the following is not a mineral?

- |             |          |             |               |
|-------------|----------|-------------|---------------|
| (1) Olivine | (2) Talc | (3) Calcite | (4) Quartzite |
|-------------|----------|-------------|---------------|

(345)

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(P.T.O.)

3. Which is not a polymorph of  $Al_2SiO_5$ ?

- (1) Kyanite            (2) Calcite            (3) Sillimanite        (4) Andalusite

4. Which mineral shows double hardness?

- (1) Magnesite        (2) Quartz            (3) Feldspar            (4) Kyanite

5. Hardness of fluorite is

- (1) 3                    (2) 4                    (3) 7                    (4) 5

6. Augite crystallized in which crystal system?

- (1) Isometric system                    (2) Monoclinic  
(3) Triclinic                                (4) Orthorhombic

7. The maximum number of axes of symmetry ——— found in crystal system.

- (1) 13                    (2) 10                    (3) 22                    (4) 9

8. Match the crystal system with correct number of classes

| <i>Group—I</i> (Crystal System) | <i>Group—II</i> (Classes) |
|---------------------------------|---------------------------|
| P. Isometric                    | 1. 3                      |
| Q. Orthorhombic                 | 2. 12                     |
| R. Hexagonal                    | 3. 7                      |
| S. Tetragonal                   | 4. 5                      |

(1) P-1, Q-2, R-3, S-4                    (2) P-4, Q-1, R-3, S-2

(3) P-3, Q-4, R-2, S-1                    (4) P-4, Q-1, R-2, S-3

9. Total number of classes in crystal system is  
(1) 22                      (2) 6                      (3) 32                      (4) 13
10. ——— is an imaginary plane which passes through the centre of crystal and divides it into two equal parts where one part is the mirror image of the other.  
(1) Axial plane                      (2) Reference plane  
(3) Plane of symmetry                      (4) Twin plane
11. Which one is not a physical property of a mineral?  
(1) Hardness                      (2) Streak                      (3) Form                      (4) Extinction
12. Which crystal is the non-pleochroic system?  
(1) Hexagonal                      (2) Triclinic                      (3) Cubic                      (4) Tetragonal
13. Biaxial minerals are not belong to ——— crystal system.  
(1) triclinic                      (2) tetragonal  
(3) monoclinic                      (4) orthorhombic
14. Which mineral shows the double refraction?  
(1) Calcite                      (2) Quartz                      (3) Feldspar                      (4) Galena
15. Streak of hematite is  
(1) black colour                      (2) yellow  
(3) cherry red                      (4) None of these

16. Point of maximum curvature in fold is defined as

- (1) hinge point
- (2) inflection point
- (3) plunge
- (4) centre of curvature

17. Transcurrent fault is a type of

- (1) normal fault
- (2) reverse fault
- (3) strike-slip fault
- (4) oblique fault

18. A plane is dipping  $45^\circ$  (True dip) towards NE, the apparent dip of plane can be

- (1)  $> 90^\circ$
- (2) only  $0^\circ$
- (3)  $45^\circ$  to  $0^\circ$
- (4)  $90^\circ$  to  $45^\circ$

19. True dip of a plane is  $30^\circ$ , what will be head of the plane?

- (1)  $45^\circ$
- (2)  $60^\circ$
- (3)  $90^\circ$
- (4)  $0^\circ$

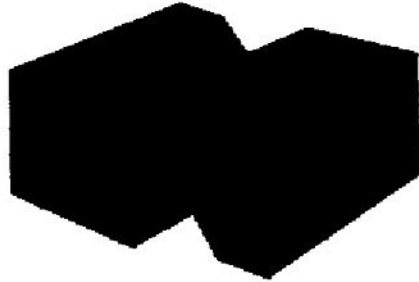
20. The direction of line along which an inclined bed or plane intersects a horizontal plane is known as

- (1) fault trace
- (2) dip direction
- (3) strike
- (4) plunge

21. Point of maximum elevation in fold is termed as

- (1) hinge point
- (2) tip point
- (3) crest
- (4) trough

22. The net slip in following fault is



- (1) *ab*                      (2) *ac*                      (3) *bc*                      (4) *ad*

23. Unconformity is define as

- (1) plane representing the time of non-deposition and erosion
- (2) plane of asymmetric deposition
- (3) plane of joint and fault on regional scale
- (4) plane of faulting

24. Which one is not a deformational structure?

- (1) Fold                      (2) Fault                      (3) Joint                      (4) Disconformity

25. Match the following :

- | <i>Group—I</i> (Terms) | <i>Group—II</i> (Definition)  |
|------------------------|---|
| P. Cross-section       | 1. Dip isogones that are perpendicular to bedding throughout the fold |
| Q. Profile section     | 2. A vertical plane through a fold                                    |
| R. Similar fold        | 3. Dip isogones that are parallel to each other                       |
| S. Parallel fold       | 4. The surface perpendicular to the hinge line                        |
| (1) P-1, Q-2, R-4, S-3 | (2) P-4, Q-2, R-1, S-3  |
| (3) P-4, Q-2, R-3, S-1 | (4) P-1, Q-2, R-3, S-4  |

- 26.** Intermediate principle stress ( $\sigma_2$ ) is vertical in
- (1) normal fault
  - (2) strike-slip fault
  - (3) reverse fault
  - (4) thrust fault
- 27.** Which of following is a correct statement?
- (1) The angle between fold limbs as measured in the cross-section is called the interlimb angle
  - (2) A fold with a horizontal axial surface by definition must have a horizontal hinge line, and is called a reclined fold
  - (3) The high point of the hinge line in a doubly-plunging fold is called the culmination
  - (4) In an anticline, the beds are younger towards the core
- 28.** ——— is an area of older rocks surrounded by younger rocks.
- (1) Inlier
  - (2) Outlier
  - (3) Dome
  - (4) Basin
- 29.** ——— having net slip equal to dip-slip and rake of net slip  $90^\circ$ .
- (1) Dip fault
  - (2) Dip-slip fault
  - (3) Strike fault
  - (4) Bedding fault
- 30.** ——— is defined as a fracture in a rock between the sides of which there is no observable movement.
- (1) Fold
  - (2) Fault
  - (3) Joint
  - (4) Shear zone
- 31.** A topographic contour is defined as
- (1) line joining the point of equal stratigraphic horizons
  - (2) line joining the point of equal elevation
  - (3) line joining the point of equal thickness
  - (4) line joining point of same age rocks



32. The surface waves are

- |                        |             |
|------------------------|-------------|
| (1) P-waves            | (2) S-waves |
| (3) both P and S waves | (4) L-waves |

33. Conrad discontinuity separates boundary between

- (1) lower crust and upper mantle
- (2) upper mantle and lower mantle
- (3) outer core and inner core
- (4) upper crust and lower crust

34. The new oceanic surface are created at ——— plate margin.

- (1) constructive    (2) distractive    (3) conservative    (4) convergent

35. Match the name of scientist (Group I) and their famous theories (Group II)

- | <i>Group—I</i>         | <i>Group—II</i>                |
|------------------------|--------------------------------|
| P. Alfred Wegener      | 1. Isostasy                    |
| Q. Airy                | 2. Sea floor spreading         |
| R. Herry Hess          | 3. Theory of continental drift |
| S. Pratt               | 4. Big Bang theory             |
| (1) P-1, Q-2, R-3, S-4 | (2) P-3, Q-1, R-2, S-4         |
| (3) P-4, Q-1, R-2, S-3 | (4) P-1, Q-2, R-4, S-3         |

36. Which of the following is supercontinent?

- (1) Gondwanaland (2) Laurasia  
(3) Pangea (4) Panthalassa

37. Mechanical erosion cannot takes place in following manner

- (1) Abrasion (2) Attrition  
(3) Cavitation (4) Dissolving action

38. An isolated table-land area with steep sides called as

- (1) knick point (2) escarpment (3) mesa (4) peneplains

39. Which one is not a river pattern?

- (1) Antecedent (2) Consequent (3) Insequent (4) Trellis

40. Which of the following term is not related to wind erosion?

- (1) Deflection (2) Traction (3) Abrasion (4) Attrition

41. Blow-outs formed due to

- (1) wind (2) river (3) glacier (4) impact

42. Fjords are formed by action of

- (1) wind (2) river (3) glacier (4) lake

43. Which of the following is not erosional process of continental glaciers?
- (1) Plucking (2) Avalanching  
(3) Rasing (4) None of the above
44. Caverns are related to
- (1) underground water (2) river  
(3) glacier (4) wind
45. Blind valley is formed due to
- (1) erosional (2) deposition (3) steep slope (4) surface runoff
46. In the following, which combination is wrong?
- (1) Knick point, escarpment, Mesa (2) Plucking, avalanching, rasing  
(3) Hamada, Yardang, sand dunes (4) Pedestal, cirques, arete
47. Fine grained igneous rocks are
- (1) intrusive body (2) plutonic  
(3) extrusive body (4) sedimentary body
48. Hard, massive, compact with interlocking grains and absence of Fossil and bedding is the essential feature of
- (1) igneous rocks (2) sedimentary rocks  
(3) metamorphic (4) limestone



55. When the igneous rocks made of only glassy materials known as  
(1) holocrystalline (2) hemi crystalline  
(3) holohyaline (4) semihyaline
56. Perlitic cracks in crystal represent the conversion from  
(1) basic magma (2) acidic magma  
(3) glassy condition (4) plutonic condition
57. Eutectic point is a  
(1) univariant (2) invariant (3) di-varient (4) tri-varient
58. Silica content in basic igneous rock is  
(1) 44 to 55% (2) more than 65%  
(3) 55 to 65% (4) more than 80%
59. Gem quality olivine is termed as  
(1) norite (2) satin-spar (3) peridot (4) ruby
60. Intergrowth of quartz and feldspar resulting  
(1) perthite (2) orbicular structure  
(3) graphic texture (4) myrmekite structure

61. Correctly match the following :

*Column—A*

*Column—B*

- |   |                        |
|---|------------------------|
| P. Laths of plagioclase are totally surrounded in a coarse grained matrix of pyroxene crystals          | 1. Spherulitic texture |
| Q. Smaller grains of one mineral are completely enclosed in large                                       | 2. Ophitic texture     |
| R. Plagioclase grains show a preferred orientation due to flowage                                       | 3. Poikilitic texture  |
| S. Spherical intergrowths of radiating quartz and feldspar replace glass as a result of devitrification | 4. Trachytic texture   |

(1) P-2, Q-3, R-4, S-1

(2) P-1, Q-2, R-3, S-4

(3) P-2, Q-4, R-3, S-1

(4) P-1, Q-3, R-2, S-4

62. Principle of uniformitarianism is proposed by

(1) William Smith

(2) James Hutton

(3) Gottlob Wornor

(4) Harry Hess

63. Which one is most stable mineral?

(1) Quartz

(2) Feldspar

(3) Zircon

(4) Olivine

64. The phi-scale is given by

(1)  $\phi = -\log_2 d$

(2)  $\phi = -\log_8 d$

(3)  $\phi = -\log_{10} d$

(4)  $\phi = \log_2 (-d)$

65. What is the sand particle size?

- (1) 2 to 0.092 mm
- (2) 4 to 2 mm
- (3) 2 to 0.0625 mm
- (4) 2 to 0.0825 mm

66. Grain size analysis of clastic rock cannot interpret

- (1) environment
- (2) source rock
- (3) energy flow
- (4) nature of transportation

67. The river sands are distinguished by

- (1) positive skewness
- (2) negative skewness
- (3) high porosity
- (4) sand dunes

68. The ratio of number of grain to grain contacts to the total number of grains counted in the traverse is

- (1) packing density
- (2) packing proximity
- (3) true porosity
- (4) true density

69. The diamictic conglomerate are characterized by

- (1) high porosity
- (2) high matrix
- (3) low matrix
- (4) zero matrix

70. Endogenetic rocks are deposited due to

- (1) precipitation
- (2) river deposition
- (3) volcanic ash
- (4) mechanical weathering

- 71.** Graywacke is a type of rock  
(1) volcanic rock (2) non-clastic sedimentary  
(3) rudaceous sedimentary rock (4) arenaceous sedimentary rock
- 72.** What is mineralogical maturity of sandstone?  
(1) Ratio of quartz to the olivine (2) Ratio of feldspar to the quartz  
(3) Ratio of quartz to feldspar (4) Ratio of flaky minerals to feldspar
- 73.** At 20° temperature, what will critical Reynolds number for laminar to turbulent flow?  
(1) 500 (2) 1200 (3) 700 (4) 1000
- 74.** Calcium carbonate could not found in  
(1) above CCD (2) below CCD (3) below ACD (4) above ACD
- 75.** Which of the following, original components bound together at time deposition?  
(1) Mudstone (2) Wackestone (3) Packstone (4) Boundstone
- 76.** Which of the following statement is false?  
(1) Graded bedding shows the grain size variation within a bed  
(2) Convolute bedding a deformed bedding structure  
(3) Secondary sedimentary structures form before the diagenesis of a sedimentary rock  
(4) Hummocky cross-stratification is primary sedimentary structure



- 77.** The metal content in an ore is called as
- (1) grade                      (2) tenor                      (3) rank                      (4) gangue
- 78.** ——— deposits comprise an assemblage of high temperature metamorphic minerals.
- (1) Hypothermal                      (2) Mesothermal  
(3) Skarn                      (4) Residual
- 79.** Among the following which one does not belong to the factor affecting the residual concentration?
- (1) Climate                      (2) Local relief  
(3) Existence of proper drainage                      (4) Gravity
- 80.** ——— is a hard mantle which is produced by useless residual materials and desiccated product of oxidation on the surface.
- (1) Gossan                      (2) Overburden                      (3) Gangue                      (4) Placer
- 81.** Goethite is a/an
- (1) silicate                      (2) sulphide                      (3) carbonate                      (4) oxide
- 82.** Tenorite is an ore mineral of
- (1) iron                      (2) manganese                      (3) copper                      (4) lead







- 100.** In the following indicates the ascending order of temperature of formation
- (1) Eclogite, Greenschist, Zeolite, Blueschist
  - (2) Greenschist, Blueschist, Eclogite, Granulite
  - (3) Zeolite, Amphibolite, Granulite, Eclogite
  - (4) Blueschist, Granulite, Amphibolite, Eclogite
- 101.** Omphacite and Pyrope Garnet are the representative minerals for
- (1) Zeolite facies
  - (2) Greenschist facies
  - (3) Glaucophane-schist facies
  - (4) Eclogite facies
- 102.** Which is not related to metamorphism?
- (1) Wind
  - (2) Pressure
  - (3) Temperature
  - (4) Chemically active fluid
- 103.** An uniform pressure is also called
- (1) direct pressure
  - (2) hydrostatic pressure
  - (3) compression
  - (4) tension
- 104.** ——— metamorphism occurs around larger intrusives at comparatively low temperature.
- (1) Pyrometamorphism
  - (2) Contact metamorphism
  - (3) Metasomatism
  - (4) Auto-metamorphism

105. Which one of the following is lithostratigraphic unit?

- (1) Eratham      (2) Acme zone      (3) Series      (4) Formation

106. The Paleozoic era is restricted between

- (1) 65 to 225 Ma      (2) 1-8 to 65 Ma  
(3) 570 to 2500 Ma      (4) 225 to 570 Ma

107. Match the following Columns and give the correct answer :

- | <i>Column—A</i>      | <i>Column—B</i> |
|----------------------|-----------------|
| P. Blueschist facies | 1. Chlorite     |
| Q. Greenschist       | 2. Plagioclase  |
| R. Granulite         | 3. Mg-Garnet    |
| S. Eclogite          | 4. Glaucophane  |
- (1) P-4, Q-1, R-2, S-3      (2) P-1, Q-4, R-3, S-2  
(3) P-2, Q-3, R-1, S-4      (4) P-3, Q-2, R-4, S-1

108. Correctly match Column A and B :

- | <i>Column—A</i> | <i>Column—B</i> |
|-----------------|-----------------|
| P. Shale        | 1. Quartzite    |
| Q. Sandstone    | 2. Amphibolite  |
| R. Granite      | 3. Slate        |
| S. Basalt       | 4. Gneiss       |
- (1) P-1, Q-2, R-4, S-3      (2) P-2, Q-1, R-4, S-3  
(3) P-3, Q-1, R-4, S-2      (4) P-4, Q-3, R-2, S-1

109. Which era is called as 'Age of Reptiles'?

- (1) Palaeozoic era (2) Mesozoic era  
(3) Cainozoic era (4) Proterozoic era

110. Which formation belongs to the Lower Gondwana Sequence?

- (1) Zawar (2) Poladpur (3) Rohtas (4) Iron stone

111. Semri Group is related to the

- (1) Upper Vindhyan (2) Lower Gondwana  
(3) Lower Vindhyan (4) Upper Gondwana

112. Which is not related to coalfield?

- (1) Chandrapur (2) Sohagpur (3) Ramgarh (4) Panna

113. Arranged in correct sequence from older to younger :

- (1) Sargurschist complex, Peninsula gneissic complex, Dharwar super group  
(2) Patcham, Umia, Katrol, Chari  
(3) Karharbari, Raniganj, Barakar, Kulti  
(4) Papaghani, Nallamalai, Cheyair, Kistna

114. Which one of the following separate the Eastern Dharwar to Western Dharwar?

- (1) Peninsula gneissic complex (2) Bababudan  
(3) Rani Bennur (4) Closepet granite

115. The maximum Genera and Species in Upper Gondwana Sequence found in

- (1) Mahadev      (2) Jabalpur      (3) Rajmahal      (4) Maleri

116. Kaladgi Group belongs to

- (1) Archaean era      (2) Proterozoic era  
(3) Palaeozoic era      (4) Mesozoic era

117. The general trend of Aravalli Group is

- (1) NW-SE      (2) E-W      (3) ESE-WNW      (4) NE-SW

118. Dhokpathan formation is overlain by ——— formation.

- (1) Pinjor      (2) Tatrot      (3) Nagri      (4) Chinji

119. Match the following :

*Column—A*

*Column—B*

P. Dhosa Oolite

1. Gondwana Sequence

Q. Mansar

2. Dhawar Super Group

R. Umaria Marine Bed

3. Sausar Group

S. Hutti Goldfield

4. Jurassic of Kutch

(1) P-3, Q-1, R-4, S-2

(2) P-2, Q-4, R-1, S-3

(3) P-1, Q-2, R-3, S-4

(4) P-4, Q-3, R-1, S-2

120. Which is not an invertebrate fossil in the following?

- (1) Productus      (2) Ptylophylum      (3) Trigonia      (4) Murex



121. Which one is an index fossil?

- (1) Trilobite      (2) Nautiloids      (3) Gastropods      (4) Bivalves

122. Match the following :

Column—A (Phylum)

Column—B (Species)

P. Brachiopoda

1. Turritella

Q. Cephalopoda

2. Goniatite

R. Gastropoda

3. Sprifer

S. Bivalvia

4. Spondylus

(1) P-1, Q-2, R-3, S-4

(2) P-1, Q-3, R-2, S-4

(3) P-3, Q-1, R-4, S-2

(4) P-3, Q-2, R-1, S-4

123. What are the characteristics of an index fossil?

- (1) Wide geographical range and limited time range  
 (2) Both time and geographical ranges should be wide  
 (3) Limited geographical range and wide time range  
 (4) None of the above

124. Trigonina has ——— dentition pattern.

- (1) Isodont      (2) Schizodont      (3) Heterodont      (4) Desmodont

125. The coiling of shell in ——— is sinistral.

- (1) Trochus      (2) Murex      (3) Planorbis      (4) Physa

- 126.** Which is not the sub-class of Cephalopoda?  
(1) Nautiloidea (2) Ammonoidea (3) Acephala (4) Dibranchia
- 127.** The body of Trilobite is made up of three distinct parts known as Cephalic Shield, Thorax and \_\_\_\_\_.  
(1) Ocular plates (2) Genital plates  
(3) Corona (4) Pygidium
- 128.** Ammonoidea is a/an  
(1) trace fossil (2) index fossil  
(3) living fossil (4) plant fossil
- 129.** Ceratitic suture-lines have  
(1) pointed lobes and rounded saddle  
(2) rounded lobes as well as rounded saddle  
(3) divided lobes and rounded saddle  
(4) divided lobes and divided saddles
- 130.** Mouth and Anus are centrally located in  
(1) regular Echinoids  
(2) irregular Echinoids  
(3) both regular and irregular Echinoids  
(4) neither regular Echinoids nor irregular Echinoids

- 131.** Both the valves are held together by means of muscles in  
 (1) articulata brachiopods (2) inarticulata brachiopods  
 (3) both (1) and (2) (4) None of the above
- 132.** Barail Series overlain by  
 (1) Tipam Series (2) Dupitila Series  
 (3) Surma Series (4) Jaintia Series
- 133.** Dinosaur commonly found in which formation?  
 (1) Lameta Bed (2) Bagh Bed (3) Deccan Trap (4) Rajmahal Trap
- 134.** The shell is equilateral and unequal in  
 (1) Acephala (2) Brachiopoda (3) Gastropoda (4) Ammonoidea
- 135.** Pupilla is a  
 (1) Discoidal Shape Gastropoda (2) Conical Shape Gastropoda  
 (3) Cylindrical Shape Gastropoda (4) Globular Shape Gastropoda
- 136.** Mamelon is the part of ——— of the Echinoids.  
 (1) Apical disc (2) Peristome (3) Spines (4) Tubercle
- 137.** Chromite deposits result from  
 (1) early magmatic dissemination (2) early magmatic segregation  
 (3) early magmatic injection (4) late magmatic segregation



144. Obsidian is a/an

- (1) metamorphic rock which contain high mafic mineral
- (2) igneous rock which contain high Fe and Mg
- (3) volcanic glass containing high silica
- (4) sedimentary rock formed by weathering of basaltic rock

145. According to Plate Tectonics Theory, most active volcanoes occur

- (1) on continents
- (2) in large tectonic plates
- (3) along plate boundaries
- (4) randomly over continents

146. Match each items and choose the correct option :

*Column—A*

*Column—B*

P. Felsic

1. Magma that flows out Earth's surface

Q. Kimberlite

2. Dark-coloured rock such as gabbro that is rich in Fe and Mg .

R. Lava

3. Rock that is rich in silica

S. Mafic

4. Ultramafic rock that can contains diamonds

(1) P-1, Q-3, R-4, S-2

(2) P-3, Q-4, R-1, S-2

(3) P-2, Q-1, R-4, S-3

(4) P-4, Q-1, R-3, S-2

147. Ores near Earth's surface are generally obtained from

- (1) waste-removal facilities
- (2) underground mines
- (3) open-pit mines
- (4) bodies of water with high concentrations of dissolved minerals

- 148.** What is the main difference between a conglomerate and breccia?
- (1) Breccia clasts are angular; conglomerate clasts are rounded
  - (2) A breccia is well stratified; a conglomerate is poorly stratified
  - (3) Breccia clasts are the size of baseballs; conglomerate clasts are larger
  - (4) Breccia has a compacted, clay-rich matrix; conglomerate has no matrix
- 149.** Detrital sedimentary rocks are classified based on the
- (1) colours of the cementing minerals
  - (2) grain sizes of the detrital particles
  - (3) compositions of soluble minerals
  - (4) degree of compaction and lithification
- 150.** Which of the following sedimentary rocks indicate long-distance transportation of the sediments?
- (1) Quartz arenite
  - (2) Breccia
  - (3) Arkose (sandstone with lots of feldspar particles)
  - (4) Felspathic wacke

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## अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली या काली बाल-प्वाइंट पेन से ही लिखें।)

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जावेगा, केवल उत्तर-पत्र का ही मूल्यांकन किया जावेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक सं० और ओ० एम० आर० पत्र सं० की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिये प्रश्न-पुस्तिका के मुखपृष्ठ के अन्दर वाले पृष्ठ तथा अंतिम पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ०एम०आर० उत्तर-पत्र परीक्षा भवन में जमा कर दें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।