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T. B. C. : CS – 11/15

Test Booklet Series

Serial No.

231263

## TEST BOOKLET

O. C. S. Preliminary Examination  
(GEOLOGY)

C

Time Allowed : 2 Hours

Maximum Marks : 300

### : INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF SAME SERIES ISSUED TO YOU.
2. ENCODE YOUR OPTIONAL SUBJECT CODE AS MENTIONED ON THE BODY OF YOUR ADMISSION CERTIFICATE AND ADVERTISEMENT AT APPROPRIATE PLACES ON THE ANSWER SHEET.
3. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
4. You have to enter your Roll No. on the Test Booklet in the Box provided alongside. **DO NOT** write anything else on the Test Booklet.
5. This Test Booklet contains 120 items (questions). Each item (question) comprises four responses (answers). You will select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the separate Answer Sheet provided, by using **BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. There will be negative markings for wrong answers. **25 percent of marks allotted to a particular item (question) will be deducted as negative marking for every wrong response (answer).**
8. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions in your **Admission Certificate**.
9. After you have completed filling in all your responses on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the Answer Sheet and the Test Booklet issued to you. You are allowed to take with you the candidate's copy/second page of the Answer Sheet, after completion of the examination, for your reference.

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SEAL

1. In a Barrovian metamorphic sequence, the second sillimanite isograd is marked by which mineral reaction ?
  - (a) Kyanite  $\rightarrow$  Sillimanite
  - (b) Muscovite + Quartz  $\rightarrow$  K-feldspar + Sillimanite +  $H_2O$
  - (c) Staurolite + Muscovite + Quartz  $\rightarrow$  Garnet + Sillimanite + Biotite +  $H_2O$
  - (d) Garnet + K-feldspar + Melt  $\rightarrow$  Biotite + Sillimanite + Quartz
2. Paired metamorphic belt shows the occurrence of the following pair of metamorphic facies series of the same age next to one another at :
  - (a) High pressure-low temperature and medium pressure-medium temperature
  - (b) Low pressure-high temperature and medium pressure-medium temperature
  - (c) High pressure-high temperature and low pressure-high temperature
  - (d) Low pressure-high temperature and high pressure-low temperature
3. Thermal metamorphism of shale produces :
  - (a) Cataclasite
  - (b) Gneiss
  - (c) Hornfels
  - (d) Mylonite
4. The metamorphic facies that indicates the maximum thermal gradient during metamorphism is :
  - (a) Sanidinite
  - (b) Granulite
  - (c) Greenschist
  - (d) Blueschist
5. The main agents of metamorphism that can produce a "Snowball Garnet" are :
  - (a) Lithostatic Pressure and Temperature
  - (b) Deviatoric (directed) Pressure and Temperature
  - (c) Lithostatic and Deviatoric (directed) Pressures
  - (d) Temperature, Lithostatic and Deviatoric (directed) Pressures
6. The mineral assemblage that is produced by granulite facies metamorphism of impure marly (calcareous) sediments is :
  - (a) Wollastonite + Scapolite + Calcite + Clinopyroxene + Quartz
  - (b) Garnet + K-feldspar + Sillimanite + Cordierite + Quartz
  - (c) Tremolite + Calcite + Quartz + Dolomite + Diopside
  - (d) Forsterite + Diopside + Dolomite + Talc + Enstatite

7. Which one of the following polymorphic transformations is likely to be the product of shallow contact metamorphism ?
  - (a) Kyanite  $\rightarrow$  Sillimanite
  - (b) Calcite  $\rightarrow$  Aragonite
  - (c) Andalusite  $\rightarrow$  Sillimanite
  - (d)  $\beta$ -quartz  $\rightarrow$  Coesite
8. Which one of the following sequence of mineral assemblages in metapelites correctly indicates a progressive metamorphic sequence of increasing metamorphic grade ?
  - (a) Garnet + Muscovite + Biotite + Chlorite + Quartz  $\rightarrow$  Staurolite + Biotite + Garnet + Muscovite + Quartz  $\rightarrow$  Biotite + Sillimanite + K-feldspar + Garnet + Quartz  $\rightarrow$  Garnet + Kyanite + Muscovite + Biotite + Quartz
  - (b) Biotite + Sillimanite + K-feldspar + Garnet + Quartz  $\rightarrow$  Garnet + Kyanite + Muscovite + Biotite + Quartz  $\rightarrow$  Staurolite + Biotite + Garnet + Muscovite + Quartz  $\rightarrow$  Garnet + Muscovite + Biotite + Chlorite + Quartz
  - (c) Staurolite + Biotite + Garnet + Muscovite + Quartz  $\rightarrow$  Garnet + Muscovite + Biotite + Chlorite + Quartz  $\rightarrow$  Garnet + Kyanite + Muscovite + Biotite + Quartz  $\rightarrow$  Biotite + Sillimanite + K-feldspar + Garnet + Quartz
  - (d) Garnet + Muscovite + Biotite + Chlorite + Quartz  $\rightarrow$  Staurolite + Biotite + Garnet + Muscovite + Quartz  $\rightarrow$  Garnet + Kyanite + Muscovite + Biotite + Quartz  $\rightarrow$  Biotite + Sillimanite + K-feldspar + Garnet + Quartz
9. The mineral assemblage that is diagnostic of eclogite facies metamorphism in metabasic rocks is :
  - (a) Orthopyroxene + Clinopyroxene + Garnet + Plagioclase + Quartz
  - (b) Garnet + Clinopyroxene + Plagioclase + Quartz
  - (c) Garnet + Clinopyroxene + Quartz
  - (d) Orthopyroxene + Plagioclase + Clinopyroxene + Quartz
10. In a progressive metamorphic sequence, the **Oligoclase isograd** in a metabasite marks the entry from :
  - (a) Greenschist to epidote amphibolite facies
  - (b) Greenschist to blueschist facies
  - (c) Amphibolite to granulite facies
  - (d) Granulite to eclogite facies
11. The bedding in which isolated thin drapes of mud occurs within cross laminae of sand and silt is called :
  - (a) Tabular bedding
  - (b) Flaser bedding
  - (c) False bedding
  - (d) Lenticular bedding

12. The matrix of packstone is :  
(a) Sand  
(b) Silt  
(c) Mud  
(d) Clay
13. In arkose :  
(a) K-feldspar > Plagioclase  
(b) Plagioclase > K-feldspar  
(c) K-feldspar = Plagioclase  
(d) None of the above
14. Orthoquartzite is :  
(a) A metamorphic rock with > 25% orthoclase  
(b) A metamorphic rock with > 95% quartz  
(c) A sedimentary rock with > 25% orthoclase  
(d) A sedimentary rock with > 95% quartz
15. The sand sized carbonate rock in which oolites > 25% and sparite > micrite is known as :  
(a) Oosparudite  
(b) Oomicrudite  
(c) Oosparite  
(d) Oomicrite
16. The term mud refers to :  
(a) Mixture of pebble and granule  
(b) Mixture of granule and sand  
(c) Mixture of sand and silt  
(d) Mixture of silt and clay
17. Antidunes are formed when :  
(a) Flow velocity is high  
(b) Flow velocity is moderate  
(c) Flow velocity is low  
(d) There is no flow
18. Herringbone cross stratification is the characteristic of :  
(a) Abyssal environment  
(b) Neritic environment  
(c) Tidal environment  
(d) Littoral environment
19. The sediment produced by chemical weathering of granite is commonly known as :  
(a) Cobble  
(b) Sand  
(c) Silt  
(d) Clay
20. Granule refers to sedimentary particle whose grain size lies between :  
(a) 16 and 8 mm  
(b) 4 and 2 mm  
(c) 2 and 1 mm  
(d) < 1 mm
21. Ophitic texture is :  
(a) A type of texture where plagioclase and pyroxene broadly are of same size  
(b) A variant of porphyritic texture where phenocryst is made up of plagioclase

- (c) A special type of poikilic texture where plagioclase laths are enclosed by relatively bigger pyroxene crystal
- (d) None of the above
22. In Bowen's Reaction Series, the field of spinel is located :
- (a) At the top-most part of the reaction series
- (b) At the lower-most part of the reaction series
- (c) In between amphibole and biotite
- (d) In between olivine and pyroxene
23. In Diopside-Anorthite system (at 1 atmosphere, dry) the Degree of Freedom (F) at eutectic point is :
- (a) 1
- (b) 3
- (c) 2
- (d) 0
24. Normal zoning in plagioclase is represented by :
- (a) Ca-content in successive rims rises and falls alternately
- (b) Ca/Na ratios remain same in successive rims of plagioclase
- (c) Sodic core and progressively calcic rims
- (d) Calcic core and progressively sodic rims
25. Norms and modes of igneous rocks are described as :
- (a) Norms and modes are products of fractional crystallization of a basic magma
- (b) Modes are theoretically possible minerals based on chemical analyses while norms refer to actually existing minerals
- (c) Norms are theoretically possible minerals based on chemical analyses while modes refer to actually existing minerals
- (d) None of the above
26. In a gabbro, you have noticed corona texture. The corona texture has been formed by :
- (a) Exsolution phenomenon in pyroxene
- (b) Simultaneous crystallization of olivine and pyroxene
- (c) Failure of reaction (along discontinuous arm of Bowen's Reaction series) between crystal and magma
- (d) None of the above
27. Phacoliths are :
- (a) Pipe like bodies that vertically cut across host country rocks
- (b) Lens-shaped concordant igneous bodies found at crests and troughs of folds

- (c) Saucer-shaped sunken igneous bodies  
(d) Up-arched igneous bodies
28. An ultramafic rock is found to be composed of almost equal proportions of ortho-and clinopyroxene. Following Streckiesen's classification, the rock should be designated as :  
(a) Dunite  
(b) Harzburgite  
(c) Websterite  
(d) Wehrlite
29. In a granitic rock, you have found perthite. You would best explain the crystallization of that granite under :  
(a) Eutectic condition  
(b) Subsolvus condition  
(c) A condition that involves a reaction between alkali and plagioclase feldspar  
(d) None of the above
30. The plutonic equivalent of Andesite is :  
(a) Syenite  
(b) Granite  
(c) Pyroxenite  
(d) Diorite
31. Ore reserve estimation is done by using :  
(a) Drilling data  
(b) Pitting done  
(c) Trenching data  
(d) Reconnaitory data
32. Pitchblende is an important ore of :  
(a) Zinc  
(b) Copper  
(c) Titanium  
(d) Uranium
33. In terms of BTU which is the poorest quality coal ?  
(a) Peat  
(b) Anthracite  
(c) Bituminous Coal  
(d) Lignite
34. The other use of diamond is :  
(a) As a refractory mineral  
(b) As an abrasive  
(c) As a flux  
(d) As a decarboniser
35. Which one of the following is a ceramic mineral ?  
(a) Chlorite  
(b) Kaolinite  
(c) Quartz  
(d) Calcite
36. The Huth gold deposits are of :  
(a) Lateritic type  
(b) Placer type  
(c) Lode type  
(d) BIF-hosted type
37. Chromite deposits are abundant in which of the following states ?  
(a) Karnataka

- (b) Rajasthan  
(c) Meghalaya  
(d) Odisha
38. The commonest copper bearing ore mineral is :  
(a) Azurite  
(b) Chalcopyrite  
(c) Native Copper  
(d) Bornite
39. Hydrothermal process is associated with :  
(a) Hot fluids  
(b) Cold fluids  
(c) Viscous magmas  
(d) Mixing of magmas
40. The metal content of an ore is expressed as :  
(a) Tenor  
(b) Grade  
(c) Rank  
(d) Opacity
41. Mohs hardness of kyanite on edges and faces are :  
(a) 1 and 4  
(b) 4 and 7  
(c) 7 and 4  
(d) 3 and 5
42. Extinction angle of oligoclase is zero, then extinction angle of Bytownite is around :  
(a)  $10^\circ$
- (b)  $20^\circ$   
(c)  $-20^\circ$   
(d)  $50^\circ$
43. Albite-orthoclase intergrowth is known as :  
(a) Graphic  
(b) Perthite  
(c) Carona  
(d) Intersertal
44. Serpentine is an altered product of :  
(a) Albite  
(b) Anorthite  
(c) Biotite  
(d) Olivine
45. Specific gravity of labradorite is 2.67, then specific gravity of anorthite must be :  
(a) 2.63  
(b) 2.65  
(c) 2.74  
(d) 3.14
46. Refraction indices of the Aegirine, alkali pyroxene are  $\alpha = 1.763$  then  $\beta$ - $\gamma$  are :  
(a) 1.799 – 1.813  
(b) 1.803 – 1.843  
(c) 1.843 – 1.853  
(d) 1.863 – 1.869
47. Which of the following is an acicular form mineral ?  
(a) Coesite

- (b) Stishovite  
(c) Natrolite  
(d) Kyanite
48. Aragonite is a dimorphic form of :  
(a) Aragonite  
(b) Aucite  
(c) Rhodochrosite  
(d) Calcite
49. Mineral diallage is a variety of :  
(a) Quartz  
(b) Augite  
(c) Diopside  
(d) Garnet
50. The  $\text{Si}_2\text{O}_7$  units are packed together regularly in a crystal, with metal atoms lying between them. The mineral is :  
(a) Olivine  
(b) Beryl  
(c) Augite  
(d) Melilite
51. In a twinkling calcite, R. g. of extraordinary ray is 1.49, then the R. g. of ordinary ray is :  
(a) 1.54  
(b) 1.95  
(c) 1.72  
(d) 1.66
52. Which of the following is lithium bearing mica ?  
(a) Lepidolite  
(b) Biotite  
(c) Muscovite  
(d) Sevilite
53. Pleochroic scheme of Hornblend is x-y yellow, y = blue-green and z = blue, then the absorption is :  
(a)  $x < y < z$   
(b)  $x > y > z$   
(c)  $y > z > x$   
(d)  $z < y < x$
54. If the extinction angle of Augite is  $45^\circ$ , then the extinction angle of Hornblende is around :  
(a)  $100^\circ$   
(b)  $92^\circ$   
(c)  $12^\circ$   
(d)  $40^\circ$
55. Uni-axial negative mineral is :  
(a) Quartz  
(b) Coesite  
(c) Garnet  
(d) Calcite
56. Index symbol of scalenohedron is :  
(a) 2020  
(b) 2240  
(c) 2131  
(d) 3031
57. Mineral with trapezohedra form faces is :  
(a) Leucite

- (b) Galena  
(c) Diamond  
(d) Spinel
58. The mineral generally have a combination of positive and negative tetrahedra is :  
(a) Tetrahedrite  
(b) Zinc blende  
(c) Boracite  
(d) Galena
59. Hemihedral form in diploid, holohedral form is :  
(a) Pyritohedron  
(b) Hexa-tetrahedron  
(c) Tetrahedron  
(d) Hexa-octahedron
60. In geniculate twin, twin plain is :  
(a) 100  
(b) 001  
(c) 101  
(d) 201
61. Assertion (A) : Refraction of slaty cleavage does not occur in a fold.  
Reasoning (R) : This happens as the layers vary in competence.  
(a) A is correct but R is false  
(b) A is false but R is correct  
(c) Both A and R are correct and R is the correct explanation of A  
(d) Both A and R are correct and R is not the correct explanation of A
62. Assertion (A) : In a normal fault hanging wall goes down with respect to foot wall.  
Reasoning (R) : Because the extension direction is horizontal parallel to dip direction.  
(a) A is correct but R is false  
(b) A is false but R is correct  
(c) Both A and R are correct and R is the correct explanation of A  
(d) Both A and R are correct and R is not the correct explanation of A
63. In a normal fault net slip is :  
(a) Maximum along the dip  
(b) Maximum along the strike  
(c) Minimum along the dip  
(d) Maximum oblique to the strike
64. Younger series rest progressively on the older members of the underlying rock is called :  
(a) Over step  
(b) Over lap  
(c) On lap  
(d) Side lap
65. In buckle folding developed by shear parallel to layer boundary, minimum strain occurs at :  
(a) Hinge Zone  
(b) Inflection Point

- (c) Right Limb  
(d) Left Limb
66. Fold having smaller outer curvature and orthogonal thickness on the limb is less than that at the fold hinge, is :  
(a) Class 1A fold  
(b) Class 1B fold  
(c) Class 1C fold  
(d) Class 2 fold
67. For a larger number of materials, the relationship between stress and strain is linear and the behaviour is then called as :  
(a) Hookean elasticity  
(b) Atterberg elasticity  
(c) Mohr's elasticity  
(d) Boolean elasticity
68. Joints developed under compression are known as :  
(a) Sheet joints  
(b) Shear joints  
(c) Tensional joints  
(d) Tectonic joints
69. All else equal, the steeper the slope, the greater the :  
(a) Shearing stress  
(b) Friction  
(c) Normal stress  
(d) Shearing strength
70. Fold having inclined axial plane and both limbs dip in same direction at different angles is known as :  
(a) Isoclinal fold  
(b) Recline fold  
(c) Overturned fold  
(d) Recumbent fold
71. The EM region for Band Number 5 is :  
(a) Visible Red  
(b) Near Infrared  
(c) Thermal Infrared  
(d) Middle Infrared
72. Which one of the following is the spectral range (in Microns) used for Biomass surveys and delineation of water bodies ?  
(a) 0.52 – 0.60  
(b) 0.63 – 0.69  
(c) 0.76 – 0.90  
(d) 1.55 – 1.75
73. In aerial photography the overlap between two adjacent photos is approximately equals to :  
(a) 20%  
(b) 40%  
(c) 60%  
(d) 80%
74. Subterranean cut-off and natural tunnels are the examples of which of the following landforms ?  
(a) Aeolian

- (b) Marine  
(c) Glacial  
(d) Karst
75. Which of the following is NOT an example of eolian sand deposits ?  
(a) Sand Shadows  
(b) Sand Undulations  
(c) Sand Sheets  
(d) Sand Plugs
76. Valleys which show no apparent adjustment to structural or lithological control are called :  
(a) Insequent valleys  
(b) Resequent valleys  
(c) Obsequent valleys  
(d) Homoclinal valleys
77. 'Chemically decomposed drift' in a weathering profile is referred in soil profile as :  
(a) A Horizon  
(b) B Horizon  
(c) C<sub>1</sub> Horizon  
(d) D Horizon
78. Which one of the following is an example of endogenetic processes ?  
(a) Gradation  
(b) Degradation  
(c) Diastrophism  
(d) Infall of Meteorites
79. Many physical and chemical ways by which the earth's surface undergoes modification are called :  
(a) Landforms  
(b) Structures  
(c) Processes  
(d) Orderly Sequences
80. "The same physical processes and laws that operate today operated throughout geological time, although not necessarily always with the same intensity as now" this statement is also known as :  
(a) Principle of Uniformitarianism  
(b) Principle of Consistency  
(c) Principle of Sustainability  
(d) Ohm's Law
81. Earthquakes of shallow focus range are caused due to :  
(a) Normal faulting  
(b) Reverse faulting  
(c) Thrust faulting  
(d) Gravity faulting
82. Thickness of Mantle is :  
(a) 3,500 km  
(b) 2,900 km  
(c) 2,500 km  
(d) 1,900 km

83. Gravity anomalies over Island Arcs are :  
(a) Intense Positive  
(b) Intense Negative  
(c) Feeble Positive  
(d) Feeble Negative
84. Wedge shaped sector of oceanic crust separated by continental blocks which originated by rotation or pulling apart of continental blocks is called :  
(a) Orocline  
(b) Sphenochasm  
(c) Seamount  
(d) Steinmann's Trinity
85. Godavari graben is an example of :  
(a) Exogeosyncline  
(b) Autogeosyncline  
(c) Zeugogeosyncline  
(d) Taphrogeosyncline
86. From the location of the Midoceanic Ridge the age of the rock will :  
(a) Increase on both the sides  
(b) Decrease on both the sides  
(c) Increase on one side and remains constant on the other side  
(d) Remains constant on both the sides
87. In Geological studies, a dome shaped intrusion is called a :  
(a) Volcanic Neck  
(b) Laccolith  
(c) Nuee ardente  
(d) Moraines Caldera
88. The Shield Volcanoes are example of :  
(a) Central eruption  
(b) Fissure eruption  
(c) Fumeroles  
(d) Moraines
89. Part of earth starting from Mohorovicic Discontinuity and extending upto Guttenberg discontinuity at 2,900 km is known as :  
(a) Inner Core  
(b) Outer Core  
(c) Mantle  
(d) Crust
90. At present stage of knowledge age of earth is :  
(a) 3,500 million years  
(b) 4,500 million years  
(c) 5,500 million years  
(d) 6,500 million years
91. The basal part of Siwalik Group is referred to as :  
(a) Pinjore Formation  
(b) Chinji Formation  
(c) Kamlial Formation  
(d) Nagari Formation

92. The uppermost litho-unit of Gondwana Sequence is :  
 (a) Jabalpur Formation  
 (b) Karharbari Formation  
 (c) Mahadeva Formation  
 (d) Umia Formation
93. The lower part of Sumeri Series in Sone Valley is represented by :  
 (a) Basal Stage  
 (b) Khenjua Stage  
 (c) Rohtas Stage  
 (d) Procellanite Stage
94. Middle Gondwana is characterized by :  
 (a) **Glossopteris** Flora  
 (b) **Dicroidium / Thinfeldia** Flora  
 (c) **Ptilophyllum** Flora  
 (d) **Rhacopteris** Flora
95. **Gangmopteris** beds in Palaeozoic succession of Kashmir are located at :  
 (a) Below Panjal traps  
 (b) Above Panjal traps  
 (c) Between the different flows of traps  
 (d) All of the above
96. The basal part of Gondwana sequence is marked by :  
 (a) Talchir Boulder Beds  
 (b) Balaini Boulder Beds  
 (c) Boulder Conglomerates  
 (d) None of the above
97. The oldest litho-unit of Dharwar Province is referred to as :  
 (a) Closepet Granite  
 (b) Babubudan Group  
 (c) Sargur Schists  
 (d) Chitardurga Group
98. Krol / Tal succession constitute one of the boundary **stratotype** for :  
 (a) Permo / Triassic boundary  
 (b) Precambrian / Cambrian boundary  
 (c) Cretaceous / Tertiary boundary  
 (d) Palaeogene / Neogene boundary
99. Eparchaeon unconformity is between :  
 (a) Palaeogene / Neogene  
 (b) Archaean / Proterozoic  
 (c) Palaeoproterozoic / Mesoproterozoic  
 (d) Tertiary / Quaternary
100. Chronostratigraphic equivalent of Geochronologic Unit Epoch is :  
 (a) Stage  
 (b) Series  
 (c) System  
 (d) Erathem
101. Biostratigraphic zone delineated on the basis of maximum development of taxa is called :  
 (a) Epibole  
 (b) Acme Zone

- (c) Peak Zone  
(d) All of the above
102. Permian / Triassic transition datum plane is placed at :  
(a) 65 m. y.  
(b) 230 m. y.  
(c) 2,500 m. y.  
(d) 320 m. y.
103. The basic and fundamental unit of Lithostratigraphic classification is :  
(a) Supergroup  
(b) Group  
(c) Formation  
(d) Member
104. Strata in two different areas are said to be correlatable if they :  
(a) Are synchronous  
(b) Have similar lithology  
(c) Occupy same position in sequence  
(d) Have same structures above and below
105. Law of Faunal and Floral succession was given by :  
(a) James Hutton  
(b) William Smith  
(c) Charles Lyell  
(d) None of the above
106. Which of the following has spiny test ?  
(a) **Cidaris**  
(b) **Micraster**  
(c) **Schizaster**  
(d) **Clypeaster**
107. Which of the following has globular shell ?  
(a) **Physa**  
(b) **Nautica**  
(c) **Trochus**  
(d) **Cerithium**
108. Fossils are not found in :  
(a) Granite  
(b) Lime stone  
(c) Sand stone  
(d) Shale
109. Nodes and nodules are found in :  
(a) **Perisphinctes**  
(b) **Nautilus**  
(c) **Belemnites**  
(d) **Acanthoceras**
110. Which of the following has an exoskeleton ?  
(a) Man  
(b) Horse  
(c) Mollusc  
(d) None of the above

111. *Ptilophyllum* is found in :  
(a) Lower Gondwana  
(b) Carboniferous  
(c) Late Cretaceous  
(d) Upper Gondwana
112. Siwalik is mainly known for :  
(a) Cephalopods  
(b) Trilobites  
(c) Vertebrates  
(d) None of the above
113. Those fossils which have short geological range and wide geographical distribution is called as :  
(a) Toto Fossil  
(b) Trace Fossil  
(c) Derived Fossil  
(d) Index Fossil
114. Dimyarian fossil is :  
(a) *Pecten*  
(b) *Ostrea*  
(c) *Cardita*  
(d) *Exogyra*
115. Madreporic plate is found in :  
(a) Ammonoids  
(b) Trilobites  
(c) Graptolites  
(d) Echinoids
116. Ventral valve is larger in :  
(a) *Pecten*  
(b) *Rhynchonella*  
(c) *Arca*  
(d) *Trigonia*
117. The suture line cuts at the margin behind the genal angle is called :  
(a) Proparian suture line  
(b) Opisthoparian suture line  
(c) Gonatoparian suture line  
(d) None of the above
118. When the septal neck project towards the protoconch, the condition is known as :  
(a) Retrosiphonate  
(b) Siphuncle  
(c) Probiphonate  
(d) None of the above
119. Which of the following has no bedical opening ?  
(a) *Terebratula*  
(b) *Productus*  
(c) *Lingula*  
(d) *Rhynchonella*
120. Which of the following has sinistrial coiling ?  
(a) *Turritella*  
(b) *Planorbis*  
(c) *Voluta*  
(d) *Murax*
- .....

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