

**SET 2016**  
**PAPER – II**

**EARTH, ATMOSPHERE, OCEAN AND PLANETARY SCIENCES**

Signature of the Invigilator

Question Booklet No. **020084**

1.

OMR Sheet No. ....

Subject Code **02**

ROLL No. 

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Time Allowed : 75 Minutes

Max. Marks : 100

No. of pages in this Booklet : 8

No. of Questions : 50

**INSTRUCTIONS FOR CANDIDATES**

1. Write your Roll No and the OMR Sheet No in the spaces provided on top of this page.
2. Fill in the necessary information in the spaces provided on the OMR response sheet.
3. This booklet consists of fifty (50) compulsory questions each carrying 2 marks.
4. Examine the question booklet carefully and tally the number of pages/questions in the booklet with the information printed above. **Do not accept a damaged or open booklet.** Damaged or faulty booklet may be got replaced within the first 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time given.
5. Each Question has four alternative responses marked (A), (B), (C) and (D) in the OMR sheet. You have to completely darken the circle indicating the most appropriate response against each item as in the illustration



6. All entries in the common OMR response sheet for Papers I and II are to be recorded in the original copy only.
7. Use only Blue/Black Ball point pen.
8. Rough Work is to be done on the blank pages provided at the end of this booklet.
9. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Sheet, except in the spaces allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, you will render yourself liable to disqualification.
10. You have to return the Original OMR Sheet to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. **You are, however, allowed to carry the test booklet and the duplicate copy of OMR Sheet** on conclusion of examination.
11. Use of any calculator, mobile phone or log table etc. is strictly prohibited.
12. **There is no negative marking.**

**SEAL**

02-16

**PAPER-II**  
**EARTH, ATMOSPHERE, OCEAN AND PLANETARY SCIENCES**

1. Which component makes up most of the Milky Way ?  
(A) Gas (B) Dust  
(C) Dark matter (D) Stars
2. Kepler's first law of planetary motion states that :  
(A) Planets move in elliptical orbits with the sun at one focus of the ellipse  
(B) Planets move in circular orbits with the sun at one focus of the ellipse  
(C) Planets move in elliptical orbits with the sun in circular ellipse  
(D) Planets move in circular orbits with the sun in elliptical ellipse
3. One of the following is not found in Paleozoic era :  
(A) Permian (B) Jurassic  
(C) Silurian (D) Ordovician
4. The Isotope of this element is used to determine the age of recent geological events :  
(A) U (B) Rb  
(C) C (D) Nd
5. "Little of the earth's topography is older than Tertiary and most of it is not older than Pleistocene" is one of the concepts of :  
(A) Geochemistry (B) Isotope Geology  
(C) Geomorphology (D) Palaeontology
6. A fossil which has restricted time but wide spatial distribution is known as :  
(A) Index fossil (B) Living fossil  
(C) Extinct fossil (D) Exotic fossil
7. Chondrites do not contain one of the following phases :  
(A) Ni-Al alloy and Olivine  
(B) Hypersthene and Diopside  
(C) Plagioclase  
(D) Biotite
8. Order of superposition is :  
(A) Basic generalization of Stratigraphy  
(B) Refers to meteorites  
(C) Related to radioactivity  
(D) Fundamental generalization of origin of the earth
9. Petrification is a process of :  
(A) Rock alteration  
(B) Weathering of rocks  
(C) Fossilization  
(D) Transportation of rocks
10. The tendency of earth's crust to maintain a state of near equilibrium is called :  
(A) Isomorphy (B) Isotrophy  
(C) Isochore (D) Isostasy



11. The chemical composition of microcline is :

- (A)  $KAlSi_3O_8$                       (B)  $KAlSi_3O_8$   
(C)  $kAlSi_3O_8$                       (D)  $KAlSi_3O_8$

12. A mineral with *bladed form* is :

- (A) Kyanite                      (B) Olivine  
(C) Calcite                      (D) Bauxite

13. The process of *supergene enrichment* refers to formation of :

- (A) Mn deposits                      (B) Fe deposits  
(C) Cu deposits                      (D) REE deposits

14. Large segments of the earth's crust characterized by concentration of specific mineral deposit are called :

- (A) Metallogenic provinces  
(B) Geochemical areas  
(C) Metallogenic epochs  
(D) Path finder

15. Platinum group of elements are typically concentrated in:

- (A) Acidic rocks  
(B) Intermediate rocks  
(C) Basic rocks  
(D) Mafic and ultramafic rocks

16. The main factor for formation of black cotton soil in Maharashtra is :

- (A) Topography                      (B) Parent material  
(C) Living organisms                      (D) Time

17. The succession of hill ranges of the Himalayas from South to North is :

- (A) The Lesser Himalaya-Greater Himalaya-Outer Himalaya-Trans Himalaya  
(B) The Greater Himalaya-Trans Himalaya-Lesser Himalaya-Outer Himalaya  
(C) The Outer Himalaya-Lesser Himalaya-Greater Himalaya-Trans Himalaya  
(D) The trans Himalaya-Outer Himalaya-Lesser Himalaya-Greater Himalaya

18. The islands located in Arabian sea :

- (A) Lakshadweep                      (B) Andaman  
(C) Nicobar                      (D) Great Andaman

19. The river which flows towards west in India is :

- (A) Mahanadi                      (B) Krishna  
(C) Cauvery                      (D) Narmada

20. Himalayan rivers are perennial because :

- (A) There are many tributaries  
(B) Of rain throughout the year  
(C) Snow melts during the summer  
(D) Shifting of rivers takes place continuously

21. The average density ( $\text{g/cm}^3$ ) of the earth is :  
 (A) 5.52 (B) 6.52  
 (C) 7.52 (D) 8.52
22. What is the pressure at 100 Km depth ?  
 (A) 63 Kb (B) 53 Kb  
 (C) 43 Kb (D) 33 Kb
23. Asymmetric folds showing sharp and angular anticlinal and synclinal parts are called :  
 (A) Chevron folds (B) Similar folds  
 (C) Convolute folds (D) Recumbent folds
24. The major chemical constituents of upper mantle are  
 (A)  $\text{SiO}_2$  and  $\text{MgO}$  (B)  $\text{FeO}$  and  $\text{Al}_2\text{O}_3$   
 (C)  $\text{CaO}$  and  $\text{Na}_2\text{O}$  (D)  $\text{K}_2\text{O}$  and  $\text{P}_2\text{O}_5$
25. The range of 'Mg number' [ $100 \text{Mg}/(\text{Mg}+\text{Fe})$ ] of upper mantle is :  
 (A) 89-92.5 (B) 70-75  
 (C) 45-49.2 (D) 56-77
26. S-waves travel only through :  
 (A) Gases  
 (B) Liquids  
 (C) Solids  
 (D) Gases and Liquids
27. The boundary between mantle and core is called :  
 (A) Moho (B) Hutton  
 (C) Eparchean (D) Gutenberg
28. The inner core is :  
 (A) Liquid (B) Solid  
 (C) Vapor (D) Gas
29. The concept of seafloor spreading is based on :  
 (A) Paleomagnetism (B) Paleochannel  
 (C) Radioactivity (D) Paleobotany
30. A tectonic plate includes :  
 (A) Upper mantle and core  
 (B) Crust and core  
 (C) Crust and upper mantle  
 (D) Crust and complete mantle
31. The most abundant element in the atmosphere is :  
 (A) O (B) N  
 (C) C (D) Ar
32. Coriolis effect causes the deflection of the ocean currents to :  
 (A) Left in the Northern hemisphere and right in the Southern hemisphere  
 (B) Right in the Northern hemisphere and left in the Southern hemisphere  
 (C) South in the Northern hemisphere and north in the Southern hemisphere  
 (D) South in the Northern hemisphere and south in the Southern hemisphere

33. Ocean currents are measured by :
- (A) Ariel photographs  
(B) Coastline photographs  
(C) Hinterland photographs  
(D) Satellites and drift bottles
34. Ocean circulation causing warming and catastrophic weather conditions once in few years is called :
- (A) Sea level changes      (B) Cyclone  
(C) El-Nino                      (D) Tidal wave
35. From the coast to the midoceanic ridge the marine provinces are :
- (A) Slope, rise, shelf, abyssal plain  
(B) Abyssal plain, rise, slope, shelf  
(C) Rise, slope, shelf, abyssal plain  
(D) Shelf, slope, rise, abyssal plain
36. The deepest portion of the ocean is :
- (A) Submarine canyon      (B) Trench  
(C) Continental shelf      (D) Abyssal plain
37. Oxygen is added to the atmosphere by :
- (A) Weathering of rocks      (B) Forest fires  
(C) Photosynthesis              (D) Landslides
38. Greenhouse gases on the earth's surface trap :
- (A) Infrared rays              (B) Gamma rays  
(C) X-rays                      (D) Ultraviolet rays
39. In which layer of the atmosphere does weather change occur ?
- (A) Stratosphere              (B) Troposphere  
(C) Thermosphere              (D) Mesosphere
40. The country which emits largest amount of CO<sup>2</sup> in the world is :
- (A) United States of America  
(B) India  
(C) China  
(D) Russia
41. Attracting dragonflies to eat adult mosquitoes and mosquito larvae is called :
- (A) Entomology  
(B) Breeding insects  
(C) Breeding dragonflies  
(D) Biological Pest control
42. The natural disaster that produces the greatest wind speed :
- (A) Tsunami                      (B) Tornado  
(C) Tidal wave                  (D) Earthquake



43. Pure water freezes at :

- (A) 100°C                      (B) 0°C  
(C) 4°C                         (D) -4°C

44. Water in the zone of aeration is called :

- (A) Juvenile water            (B) Meteoric water  
(C) Mineral water            (D) Vadose water

45. Hail is a form of :

- (A) Evaporation  
(B) Evapotranspiration  
(C) Precipitation  
(D) Run off

46. Photovoltaic cells are used in :

- (A) Wind energy generation  
(B) Solar energy generation  
(C) Tidal energy production  
(D) Atomic energy production

47. The richness of the biodiversity depends on :

- (A) Density of forest  
(B) Speed of wind  
(C) Climatic conditions and area  
(D) Intensity of rainfall

48. Ecology is :

- (A) Synonymous with environmental science  
(B) Related to evolutionary biology and genetics  
(C) Related to economic conditions of people  
(D) Related to seismic intensity

49. Terrestrial biodiversity tends to be greater near :

- (A) Equator  
(B) Tropic of Cancer  
(C) Tropic of Capricorn  
(D) North Pole

50. The spectral bands used in Satellite remote sensing are :

- (A) Alpha rays                      (B) X-rays  
(C) UV-rays                         (D) Visible light