

Test Paper : II  
 Test Subject : EARTH ATMOSPHERIC,  
 OCEAN AND PLANETARY  
 SCIENCES  
 Test Subject Code : A-08-02

Test Booklet Serial No. : \_\_\_\_\_  
 OMR Sheet No. : \_\_\_\_\_  
 Hall Ticket No. 

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 (Figures as per admission card)

**Name & Signature of Invigilator**

Name : \_\_\_\_\_ Signature : \_\_\_\_\_

**Paper : II**  
**Subject : EARTH ATMOSPHERIC, OCEAN AND PLANETARY SCIENCES**

Time : 1 Hour 15 Minutes

Maximum Marks : 100

Number of Pages in this Booklet : 12

Number of Questions in this Booklet : 50

**Instructions for the Candidates**

- Write your Hall Ticket Number in the space provided on the top of this page.
- This paper consists of fifty multiple-choice type of questions.
- At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
  - To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal and do not accept an open booklet.
  - Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.**
  - After this verification is over, the Test Booklet Number should be entered in the OMR Sheet and the OMR Sheet Number should be entered on this Test Booklet.
- Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.  
**Example :**

A	B	C	D
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 where (C) is the correct response.
- Your responses to the items are to be indicated in the **OMR Sheet given to you**. If you mark at any place other than in the circle in the Answer Sheet, it will not be evaluated.
- Read instructions given inside carefully.
- Rough Work is to be done in the end of this booklet.
- If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
- You have to return the test question booklet and OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall.
- Use only Blue/Black Ball point pen.**
- Use of any calculator or log table etc., is prohibited.**
- There is no negative marks for incorrect answers.**

**అభ్యర్థులకు సూచనలు**

- ఈ పుట పై భాగంలో ఇవ్వబడిన స్థలంలో మీ హాల్ టికెట్ సంఖ్యను రాయండి.
- ఈ ప్రశ్న పత్రము యాభై బహుళైచ్ఛిక ప్రశ్నలను కలిగి ఉంది.
- పరీక్ష ప్రారంభమున ఈ ప్రశ్నపత్రము మీకు ఇవ్వబడుతుంది. మొదటి ఐదు నిమిషములలో ఈ ప్రశ్నపత్రమును తెరిచి కింద తెలిపిన అంశాలను తప్పనిసరిగా సరిచూసుకోండి.
  - ఈ ప్రశ్న పత్రమును చూడడానికి కుర్చీపీజి అంచున ఉన్న కాగితపు సీలును చించండి. స్టిక్కర్ సీలులేని మరియు ఇదివరకే తెరిచి ఉన్న ప్రశ్నపత్రమును మీరు అంగీకరించవద్దు.
  - కురు పేజీ పై ముద్రించిన సమాచారం ప్రకారం ఈ ప్రశ్నపత్రములోని పేజీల సంఖ్యను మరియు ప్రశ్నల సంఖ్యను సరిచూసుకోండి. పేజీల సంఖ్యకు సంబంధించి గానీ లేదా సూచించిన సంఖ్యలో ప్రశ్నలు లేకపోవుట లేదా నిజప్రతి కాకపోవుట లేదా ప్రశ్నలు క్రమపద్ధతిలో లేకపోవుట లేదా ఏదైనా తేడాలుండుట వంటి దోషపూరితమైన ప్రశ్న పత్రాన్ని వెంటనే మొదటి ఐదు నిమిషాల్లో పరీక్షా పర్యవేక్షకునికి తిరిగి ఇచ్చివేసి దానికి బదులుగా సరిగ్గా ఉన్న ప్రశ్నపత్రాన్ని తీసుకోండి. తదనంతరం ప్రశ్నపత్రము మార్చబడదు అదనపు సమయం ఇవ్వబడదు.
  - పై విధంగా సరిచూసుకొన్న తర్వాత ప్రశ్నపత్రం సంఖ్యను OMR పత్రము పై అదేవిధంగా OMR పత్రము సంఖ్యను ఈ ప్రశ్నపత్రము పై నిర్దిష్ట స్థలంలో రాయవలెను.
- ప్రతి ప్రశ్నకు నాలుగు ప్రత్యామ్నాయ ప్రతిస్పందనలు (A), (B), (C) మరియు (D) లుగా ఇవ్వబడ్డాయి. ప్రతి ప్రశ్నకు సరైన ప్రతిస్పందనను ఎన్నుకొని కింద తెలిపిన విధంగా OMR పత్రములో ప్రతి ప్రశ్నా సంఖ్యకు ఇవ్వబడిన నాలుగు వృత్తాల్లో సరైన ప్రతిస్పందనను సూచించే వృత్తాన్ని బాల్ పాయింట్ పెన్ తో కింద తెలిపిన విధంగా పూరించాలి.  
**ఉదాహరణ :**

A	B	C	D
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 (C) సరైన ప్రతిస్పందన అయితే
- ప్రశ్నలకు ప్రతిస్పందనలను ఈ ప్రశ్నపత్రముతో ఇవ్వబడిన OMR పత్రము పైన ఇవ్వబడిన వృత్తాల్లోనే పూరించి గుర్తించాలి. అలాకాక సమాధాన పత్రంపై వేరొక చోట గుర్తిస్తే మీ ప్రతిస్పందన మూల్యాంకనం చేయబడదు.
- ప్రశ్న పత్రము లోపల ఇచ్చిన సూచనలను జాగ్రత్తగా చదవండి.
- చిత్తుపనిని ప్రశ్నపత్రము చివర ఇచ్చిన ఖాళీస్థలములో చేయాలి.
- OMR పత్రము పై నిర్ణీత స్థలంలో సూచించవలసిన వివరాలు తప్పించి ఇతర స్థలంలో మీ గుర్తింపును తెలిపే విధంగా మీ పేరు రాయడం గానీ లేదా ఇతర చిహ్నాలను పెట్టడం గానీ చేసినట్లయితే మీ అనర్హతకు మీరే బాధ్యులవుతారు.
- పరీక్ష ప్రారంభమున తర్వాత మీ ప్రశ్నపత్రాన్ని మరియు OMR పత్రాన్ని తప్పనిసరిగా పరీక్షపర్యవేక్షకుడికి ఇవ్వాలి. వాటిని పరీక్ష గది బయటకు తీసుకువెళ్లకూడదు.
- నీలి/నల్ల రంగు బాల్ పాయింట్ పెన్ మాత్రమే ఉపయోగించాలి.
- లాగరిథమ్ టేబుల్స్, క్యాలిక్యులేటర్లు, ఎలక్ట్రానిక్ పరికరాలు వెయదలగునవి పరీక్ష గదిలో ఉపయోగించడం నిషేధం.
- తప్పు సమాధానాలకు మార్కుల తగ్గింపు లేదు.





# EARTH ATMOSPHERIC, OCEAN AND PLANETARY SCIENCES

## Paper – II

1. Mean radius of the earth's orbit about the Sun is expressed in
  - (A) Astronomical unit
  - (B) Light year
  - (C) Aristotalian year
  - (D) Geometrical unit
2. Earth's only natural satellite is
  - (A) Sun
  - (B) Mercury
  - (C) Moon
  - (D) Venus
3. "Each planet is roughly twice as far from the Sun as its closest neighbour" is known as
  - (A) Nebular hypothesis
  - (B) Bode's law
  - (C) Darcy's law
  - (D) Coulomb's law
4. Mohorovicic discontinuity represents boundary between
  - (A) Mantle and outer core
  - (B) Outer core and inner core
  - (C) Crust and mantle
  - (D) Weathered rock and unaltered rock
5. **Statement 1** : Physical equipotential surface of gravity is called geoid  
**Statement 2** : Geoid reflects the true distribution of mass inside the earth  
**Statement 3** : Geoid differs from the theoretical ellipsoid by small amount
  - (A) 1 is true, 2 and 3 false
  - (B) 1 is false, 2 and 3 true
  - (C) 1 and 2 are true but 3 is false
  - (D) All the three statements are true



6. Magnetisation acquired by earth during slow settling of the fine grained particles in the presence of external field is called
- (A) Isothermal remnant magnetisation
  - (B) Detrital remnant magnetisation
  - (C) Chemical remnant magnetisation
  - (D) Viscous remnant magnetisation
7. 11 year cycle of external component of earth's magnetic field is called
- (A) Diurnal variation
  - (B) Magnetic storm
  - (C) Sun spot activity
  - (D) Local magnetic variation
8. Famous sentence of James Hutton, "Present is the key to the past" is based on
- (A) Principle of uniformitarianism
  - (B) Principle of fossil content
  - (C) Principle of lithology
  - (D) Principle of superposition
9. Silicified wood is an example of
- (A) Cast and mould
  - (B) Petrification
  - (C) Ichnofossils
  - (D) Trace fossils
10. The nearest planet to the Sun is
- (A) Jupiter
  - (B) Venus
  - (C) Mercury
  - (D) Mars
11. Amongst the silicates, pyroxenes belong to
- (A) Orthosilicates
  - (B) Sorosilicates
  - (C) Chain silicates
  - (D) Sheet silicates
12. Igneous rocks with  $\text{SiO}_2 > 62\%$  are designated as
- (A) Basic
  - (B) Acidic
  - (C) Intermediate
  - (D) Ultrabasic



- 13.** What is the name of the rock dominated by mineral calcite ?
- (A) Limestone
  - (B) Granulite
  - (C) Phyllite
  - (D) Eclogite
- 14.** Metamorphic rock with conspicuous parallel structure is called
- (A) Granulite
  - (B) Marble
  - (C) Quartzite
  - (D) Schist
- 15.** Wall rock alterations that indicate mineral concentrations include
- (A) Carbonatization
  - (B) Albititization
  - (C) Chloritization
  - (D) All of the above
- 16.** Spalling is a term associated with
- (A) Fault
  - (B) Weathering
  - (C) Glacial action
  - (D) Sea floor spreading
- 17.** The dry porous area of pebbles and boulders at the foot hills of Himalayas is called
- (A) Bhabar
  - (B) Bhangar
  - (C) Terai
  - (D) Khadar
- 18.** The sediments that a stream moves along the bottom of the stream channel is called
- (A) Bottom load
  - (B) Suspended load
  - (C) Fine load
  - (D) Bed load
- 19.** The type of soil where horizon formation is absent is
- (A) Vertisol
  - (B) Inseptisol
  - (C) Entisol
  - (D) Ultisol



**20.** Which of the following statements on glacial landform are correct ?

1. Arete is the knife-edged boundary between cirques
2. Medial moraines occur in the middle of the glacier
3. Drumlins are a group of small hills made by glacial erosion
4. Glacial striae indicate the direction of movement of glaciers

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

**21.** The fault in which the hanging wall has gone down relative to the foot wall is known as

- (A) Normal fault  
(B) Reverse fault  
(C) Transcurrent fault  
(D) Strike slip fault

**22.** The fold which is convex upwards is called \_\_\_\_\_ fold.

- (A) Syncline  
(B) Recumbent  
(C) Synform  
(D) Antiform

**23.** Which of the following show the effect of tensional forces ?

1. Columnar joints
2. Mud cracks
3. Cross joints
4. Bedding joints

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

**24.** The fold having angular hinge is known as

- (A) Tight fold  
(B) Chevron fold  
(C) Parallel fold  
(D) Similar fold

**25.** The ratio of the shearing stress to the shearing strain is

- (A) Poisson's ratio  
(B) Incompressibility  
(C) Young's modulus  
(D) Rigidity modulus



26. The branch of geophysics, which deals with seismic waves is called
- (A) Seismology
  - (B) Limnology
  - (C) Palynology
  - (D) None of the above
27. The upper shell of the earth up to 100 km depth is called
- (A) Crust
  - (B) Lithosphere
  - (C) Biosphere
  - (D) Asthenosphere
28. \_\_\_\_\_ is the point situated on the surface of the earth above the focus of an earthquake.
- (A) Epicentre
  - (B) Centre of gravity
  - (C) Focal point
  - (D) Stress location
29. \_\_\_\_\_ is an example of sea floor spreading.
- (A) San Marina trench
  - (B) San Andreas fault
  - (C) Mid Atlantic ridge
  - (D) Rocky and Andes mountains
30. Tsunamis are developed due to
- 1. Submarine quakes
  - 2. Floods
  - 3. Volcanic eruptions within oceans
  - 4. Cyclones
- (A) 1 and 3 are correct
  - (B) 1 and 2 are correct
  - (C) 3 and 4 are correct
  - (D) All are correct
31. The oceanic conveyor belt flows continuously in
- (A) Arctic ocean
  - (B) Atlantic ocean
  - (C) Indian ocean
  - (D) Pacific ocean
32. Continental shelf is defined as
- (A) The highest of the continent from mean sea level
  - (B) The highest difference between two continents
  - (C) The zone around the continents from the low water mark seaward upto the continental slope
  - (D) The distance between two continents



- 33.** Water masses are identified by
- (A) Temperature, salinity, nutrients and oxygen content
  - (B) Temperature they possess
  - (C) Depth at which they occur
  - (D) The mass of water they possess
- 34.** The force due to the rotation of the earth is
- (A) Pressure gradient force
  - (B) Fractional force
  - (C) Gravity force
  - (D) Coriolis force
- 35.** In the atmosphere, meteorologically, the most significant waves are
- (A) Sound
  - (B) Gravity
  - (C) Rossby
  - (D) Electromagnetic
- 36.** The type of low frequency gravity wave trapped in a vertical boundary on the equator is called
- (A) Shearing gravity
  - (B) Kelvin wave
  - (C) Rossby wave
  - (D) Internal wave
- 37.** The height of the Prandtl layer is
- (A) 10 m
  - (B) 50 m
  - (C) 500 m
  - (D) 1500 m
- 38.** The layer in which ozone is present is called
- (A) Troposphere
  - (B) Stratosphere
  - (C) Mesosphere
  - (D) Exosphere





**39.** In an inversion layer

- (A) Temperature decreases with height
- (B) Temperature increases with height
- (C) Temperature is zero
- (D) Temperature is constant

**40.** The approximation where density variation is taken only in the pressure gradient term and not in the other terms is called

- (A) Hydrostatic approximation
- (B) Geostrophic approximation
- (C) Boussinesq approximation
- (D) Brunt Vaisala approximation

**41.** The word “ecosystem” was coined by

- (A) Haeckle
- (B) Buckle
- (C) Alexander
- (D) Tansley

**42.** The term “overburden” is associated with

- (A) Opencast mining
- (B) Underground mining
- (C) Strip mining
- (D) Offshore mining

**43.** Which of the following statements are incorrect ?

1. 0.4 to 0.5 microns is not a part of the visible band
  2. 0.7 to 0.8 microns is not a part of the visible band
  3. Radio waves have the shortest wavelength
  4. Gamma ray band is also known as infrared band
- (A) 1, 3 and 4
  - (B) 2, 3 and 4
  - (C) 1, 2 and 3
  - (D) 1, 2 and 4

**44.** “Minamata” disease is the result of

- (A) Air pollution
- (B) Nuclear pollution
- (C) Water pollution
- (D) Noise pollution



45. Primary ecological succession may be observed in
- (A) Deep forest
  - (B) New volcanic islands
  - (C) Coastal areas
  - (D) Delta region
46. The international decade for natural hazard and their mitigation was observed by UNO during
- (A) 1980s
  - (B) 1990s
  - (C) 2000s
  - (D) 2010s
47. Hot spots in biodiversity is the region, which shows
- (A) Abundant availability of plants and animals
  - (B) Richest and most threatened reservoirs of plants and animals
  - (C) Equal distribution of plants and animals
  - (D) Sparse distribution of plants and animals
48. Identify the correct sequence of processes in hydrological cycle
- (A) Precipitation, condensation, run off and evaporation
  - (B) Run off, condensation, evaporation and precipitation
  - (C) Condensation, evaporation, precipitation and run off
  - (D) Evaporation, condensation, precipitation and run off
49. The correct erosional sequence in the degradation of land
- (A) Gully, ravine, rill and bad land
  - (B) Rill, ravine, bad land and gully
  - (C) Rill, gully, ravine and bad land
  - (D) Ravine, gully, rill and bad land
50. Which one of the following is an Indian satellite sensor ?
- (A) TM
  - (B) LISS II
  - (C) HRV
  - (D) MSS



## Space for Rough Work



**Space for Rough Work**