

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA

Ph. D. ENTRANCE TEST (PET) – 27<sup>th</sup> January 2019

Signature of Invigilators

Earth Science  
(19/26)

Roll No.

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(in figures as in Hall Ticket)

Roll No. \_\_\_\_\_

(in words)

Maximum Marks: 50

No. Of Printed Pages : 8

**Instruction for the Candidate:**

1. Write your Roll Number in the space provided on the top of this page.
2. This paper consists of **FIFTY (50)** multiple choice type questions. Each Question carries **ONE (1)** mark.
3. 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:
  - a. 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.
  - b. Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faculty 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.
  - c. After this verification is over, the Test Booklet Number should be entered on the OMR Answer Sheet and the OMR Answer Sheet Number should be entered on this Test Booklet.
4. 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) ● (C) (D) where (B) is correct response.
5. Your responses to the items are to be indicated on the OMR Answer Sheet under Paper – II only. If you mark your response at any place other than in the circle in the OMR Answer Sheet, it will not be evaluated.
6. Read instructions given inside carefully.
7. Rough Work is to be done in the end of this booklet.
8. If you write your Name, Roll Number, Phone Number 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, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.
9. You have to return the original OMR Answer Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet and duplicate copy of OMR Answer Sheet on conclusion of examination
10. Use only Blue/ Black Ball point pen.
11. Use of any calculator or log table etc., is prohibited.
12. There shall be no negative marking.



## Earth Science

(19/26)

**Note:** This paper contains **FIFTY (50)** multiple-choice questions. Each Question carries **ONE (1)** mark.

- 01) In larger region there are many small towns, a smaller number of medium sized towns and relatively few large cities. The theory that explains it is \_\_\_\_\_.
- A) Central Place Theory  
B) Theory of Urban Hierarchy  
C) Law of Primate City  
D) Rank Size Rule
- 02) The challenge of development in the broad sense is to
- A) i) improve the quality of life  
B) ii) greater individual freedom  
C) iii) richer cultural life  
D) iv) less poverty
- 03) The ability of land to support human life and satisfy human wants is expressed in terms of \_\_\_\_\_.
- A) i) carrying capacity  
B) ii) working capacity  
C) iii) population density  
D) iv) agricultural density
- 04) The rocky outcrop of \_\_\_\_\_ ranges forms the water divide between Narmada and Tapi rivers.
- A) Vindhyan  
B) Rajpipla  
C) Ratanmahal  
D) Satpura
- 05) Though Logical Positivism became widely accepted as a working principle in Human Geography only in the 1950s, the seeds of 'Positivist Science' were established by \_\_\_\_\_ in 1925 through his essay entitled 'Morphology of Landscape'.
- A) August Comte  
B) Carl Sauer  
C) Alfred Hettner  
D) Vidal de la Blache
- 06) Physical Geography flourished in Greece in early times because of which of the following reasons
- A) diverse relief features  
B) clear sky  
C) development of applied mathematics and science  
D) fertile arable land
- 07) Hamlets \_\_\_\_\_ has a population of \_\_\_\_\_ persons.
- A) 1 to 10  
B) 11 to 100  
C) 101 to 500  
D) 501 to 20,000
- 08) The "Early Expanding Regime" is in the \_\_\_\_\_ stage of Demographic Transition.
- A) I  
B) II  
C) III  
D) IV
- 09) Which of the following factor is responsible for zonal stratification in vegetation types from moist subtropical to dry arctic?
- A) altitude  
B) temperature  
C) longitudinal extent  
D) humidity
- 10) The following statements are related to Indian Agriculture. State which of them are TRUE?
- a. India has one of the World's largest cropped area  
b. Cropping pattern is dominated by cereal crops  
c. The average size of Indian farm holding is too small for several agricultural operations
- A) a & b  
B) b & c  
C) a & c  
D) All Three

- 11) Areas which are engine for economic growth supported by quality infrastructure complemented by an attractive fiscal package are known as \_\_\_\_\_.
- Export Processing Zones
  - Special Economic Zones
  - Duty Free Tariff Zones
  - Indian Technical and Economic Cooperation Zones
- 12) The rigid lithospheric slabs are known as 'plates'. What would be the result if the oceanic plate collides with continental plate?
- The oceanic plate is forced below the continental plate
  - The continental plate is forced below the oceanic plate
  - The oceanic and continental plates will collide with each other
  - The oceanic and continental plates will never touch each other
- 13) Floods and droughts are the two extremes of which of the following cycles?
- Carbon
  - Nitrogen
  - Ecological
  - Hydrological
- 14) Intensity of irrigation is defined as \_\_\_\_\_.
- % of area under double cropping
  - % of well irrigated area to the net irrigated area
  - % of net irrigated area to the net sown ar
  - % of net irrigated area to the total geographical area
- 15) Manufacturing of cement requires heavy low value and weight losing materials but the transportation over long distance involves huge costs. The transportation cost may be reduced if, \_\_\_\_\_.
- Road and rail transportation is used for transporting cement
  - Manufacturing plant is located away from the market
  - Manufacturing plant is located near the lime stone quarrying zone
  - Waterways (internal and external) is used for transporting cement
- 16) The saturation of vapour pressure reaches a maximum of 1013 mb at \_\_\_\_\_.
- Boiling Point
  - Melting Point
  - Freezing Point
  - None of These
- 17) During \_\_\_\_\_ episode trade winds strengthen and warm surface water accumulate in a deep pool near Asia.
- La Nina
  - El Nino
  - Both i & ii
  - None of them
- 18) Alluvial fans and cones are the features of \_\_\_\_\_ stage of cycle of erosion.
- youthful
  - mature
  - old
  - mature & old
- 19) Which of the following characteristics are related to primary data?
- Consistency
  - Homogeneity
  - Completeness
  - All the three
- 20) Which projection is used for preparing the topographical map in India.
- International Map Projection
  - Bonne's
  - Polyconic
  - Mercator
- 21) Trade winds are so named because they \_\_\_\_\_.
- Encourage trade
  - Blow persistently over a trodden path, especially over the ocean
  - Follow on trading routes in the days of the sailing ships
  - Blow from the coasts of the trading nations
- 22) Folding of the earth crust is the result of \_\_\_\_\_.
- Compression
  - Eruption
  - Tension
  - Spreading

- 23) The lines joining places recording the earthquake at the same time are known as \_\_\_\_\_ lines.
- Co-seismal
  - Iso-seismal
  - Homo-seismal
  - Seismo-tectonic
- 24) Singapore is a site for high \_\_\_\_\_ intensive business.
- Labour
  - Market
  - Raw Material
  - Capital
- 25) Location of Pulp and Paper industry is based on \_\_\_\_\_ as a factor of location.
- Labour
  - Market
  - Raw Material
  - Capital
- 26) Nature of site is an important factor for \_\_\_\_\_ industry.
- Automobile
  - Iron & Steel
  - Ship Building
  - Chemical
- 27) The Petroleum Refining Industry is increasingly becoming \_\_\_\_\_ oriented.
- Labour
  - Market
  - Labour
  - Capital
- 28) If the Material Index of the product is more than One (01) the final product \_\_\_\_\_ weight
- Gains
  - Losses
  - Remains Same
  - Fluctuating
- 29) \_\_\_\_\_ Countries have industrialized most recently.
- South African
  - South American
  - South East Asian
  - Eastern European
- 30) World wide integration of economic, cultural, political, religious and social systems is known as \_\_\_\_\_
- Socialisation
  - Liberalisation
  - Globalisation
  - Industrialisation
- 31) \_\_\_\_\_ is a vital factor of production because its use can be made flexible.
- Capital
  - Labour
  - Raw Material
  - Land
- 32) \_\_\_\_\_ are chains connecting the manufacturing system together.
- Linkages
  - Arcs & Node
  - Industrial Regions
  - Industrial Complex
- 33) \_\_\_\_\_ do not affect ocean salinity.
- Evaporation and precipitation
  - Changes in temperature
  - Ocean currents
  - Tides
- 34) Knickpoint is associated with. \_\_\_\_\_
- Glacier profile
  - River profile
  - Mountains
  - Coastal area
- 35) \_\_\_\_\_ is meteorologically a very important gas as it is transparent to the incoming solar radiation but opaque to the outgoing terrestrial radiation.
- Argon
  - Carbon Dioxide
  - Neon
  - Nitrogen
- 36) The transitional zone between two ecosystems is called \_\_\_\_\_.
- Biome
  - Ecotone
  - Biotope
  - Sere

- 37) The phrase "Areal Differentiation" was introduced by \_\_\_\_\_.
- A) Hartshorne  
B) Hettner  
C) Sauer  
D) Richthofen
- 38) \_\_\_\_\_ is considered the originator of dualism between physical and human geography.
- A) Carl Ritter  
B) Elisee Reclus  
C) George Gerland  
D) Oscar Peschel
- 39) There is a direct correlation between literacy transition and \_\_\_\_\_ transformation.
- A) economic  
B) social  
C) political  
D) socio-economic
- 40) The most important factor influencing International Trade is \_\_\_\_\_
- A) geographical distribution of resources  
B) level of development  
C) impact of government policies  
D) trade agreements
- 41) \_\_\_\_\_ is a polytheistic religion.
- A) Christianity  
B) Hinduism  
C) Muslim  
D) Zoroastrianism
- 42) Principal Component Analysis is used to delineate \_\_\_\_\_ regions.
- A) Depressed  
B) Formal  
C) Functional  
D) Planning
- 43) The passes of Gomal, Khyber and Bolan are located in the \_\_\_\_\_ Ranges.
- A) Karakoram  
B) Zaskar  
C) Sulaiman  
D) Hindu Kush
- 44) North, South, East, West are four main directions and are known as \_\_\_\_\_.
- A) Cardinal Points  
B) Geographical poles  
C) Coordinates  
D) Zero Points
- 45) In an aerial photograph what would be the RF if the focal length = one feet; altitude above sea level = 11,000 ft.; and elevation of ground = 1,000 feet \_\_\_\_\_.
- A) 1 : 1,10,000  
B) 1 : 11,000  
C) 1 : 10,000  
D) 1 : 1,000
- 46) t-Test is not used for testing the \_\_\_\_\_.
- A) significance of mean of small sample  
B) significance of means of two small independent samples  
C) significance of correlation coefficient in small sample  
D) goodness of fit
- 47) Distance between isotherms indicate temperature \_\_\_\_\_
- A) gradient  
B) anomaly  
C) lag  
D) pattern
- 48) The Andamanese belong to the \_\_\_\_\_ racial stock.
- A) Australoid  
B) Caucasoid  
C) Mongoloid  
D) Negroid
- 49) At the 2011 Census the tribal population accounted for more than \_\_\_\_\_ per cent of the country's population.
- A) six  
B) seven  
C) eight  
D) nine

50) Which of the following characteristics are related to primary data?

- A) Consistency
- B) Homogeneity
- C) Completeness
- D) All the above

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**Rough Work:**