UNIVERSITY OF MYSORE
Ph.D. Entrance Examination, November - 2020

SUBJECT CODE : **2** **9**

Entrance Reg. No.

QUESTION BOOKLET NO.

QUESTION BOOKLET
(Read carefully the instructions given in the Question Booklet)

SUBJECT : **GEO-INFORMATION SCIENCE**

MAXIMUM MARKS : 100   **MAXIMUM TIME : THREE HOURS**

(Including initial 10 minutes for filling O.M.R. Answer sheet)

INSTRUCTIONS TO THE CANDIDATES

1. The sealed questions booklet containing 50 questions enclosed with O.M.R. Answer Sheet is given to you.
2. Verify whether the given question booklet is of the same subject which you have opted for examination.
3. Open the question paper seal carefully and take out the enclosed O.M.R. Answer Sheet outside the question booklet and fill up the general information in the O.M.R. Answer sheet. If you fail to fill up the details in the form of alphabet and signs as instructed, you will be personally responsible for consequences arising during scoring of your Answer Sheet.
4. During the examination:
   a) Read each question carefully.
   b) Determine the Most appropriate/correct answer from the four available choices given under each question.
   c) Completely darken the relevant circle against the Question in the O.M.R. Answer Sheet. For example, in the question paper if "C" is correct answer for Question No.8, then darken against Sl. No.8 of O.M.R. Answer Sheet using Blue/Black Ball Point Pen as follows:

   Question No. 8. Ⓐ Ⓑ ⬤ Ⓓ (Only example) (Use Ball Pen only)

5. Rough work should be done only on the blank space provided in the Question Booklet. <u>Rough work should not be done on the O.M.R. Answer Sheet.</u>
6. <u>If more than one circle is darkened for a given question, such answer is treated as wrong and no mark will be given. See the example in the O.M.R. Sheet.</u>
7. The candidate and the Room Supervisor should sign in the O.M.R. Sheet at the specified place.
8. Candidate should return the original O.M.R. Answer Sheet and the university copy to the Room Supervisor after the examination.
9. Candidate can carry the question booklet and the candidate copy of the O.M.R. Sheet.
10. The calculator, pager and mobile phone are not allowed inside the examination hall.
11. **If a candidate is found committing malpractice, such a candidate shall not be considered for admission to the course and action against such candidate will be taken as per rules.**

INSTRUCTIONS TO FILL UP THE O.M.R. SHEET

1. There is only one most appropriate/correct answer for each question.
2. For each question, only one circle must be darkened with BLUE or BLACK ball point pen only. Do not try to alter it.
3. Circle should be darkened completely so that the alphabet inside it is not visible.
4. Do not make any stray marks on O.M.R. Sheet.

ಗಮನಿಸಿ : ಸೂಚನೆಗಳ ಕನ್ನಡ ಆವೃತ್ತಿಯು ಈ ಪುಸ್ತಕದ ಹಿಂಭಾಗದಲ್ಲಿ ಮುದ್ರಿಸಲ್ಪಟ್ಟಿದೆ.

M-5260

PART - A

This part shall contains 50 multiple choice/objective type questions, each question carrying one mark. [50×1=50]

1) Karst topography is found mainly in regions characterized by:

  (A) Alluvial fans   (B) Glacial outwash plains

  (C) Limestone bedrock   (D) Loess

2) Carbonation and hydrolysis are examples of:

  (A) Mechanical weathering   (B) Chemical weathering

  (C) Erosion   (D) Rock formation

3) Tidal Hypothesis was forwarded by:

  (A) Kant   (B) Laplace

  (C) Jeans and Jeffrey   (D) Newton

4) What is the dry adiabatic lapse rate?

  (A) 1°C per Km   (B) 0.1° C per Km

  (C) 4°C per Km   (D) 10° C per Km

5) Instrument for determination of insolation is called:

  (A) Pyranometers   (B) Thermosters

  (C) Thermometer   (D) Thermagyl

6) The Ural Mountains were formed in:

  (A) Carboniferous period   (B) Permean period

  (C) Tertiary period   (D) Archaean period

7) Match the correct columns:

List-I

1. Belt of calm
2. Deflective Force
3. Roaring forties
4. Harmattan

List-II

i. G.G Coriolis
ii. Doctor
iii. Equatorial
iv. Weaterlies

	1	2	3	4
(A)	ii	iii	i	iv
(B)	iv	ii	iii	i
(C)	iii	i	iv	ii
(D)	i	iv	ii	iii

8) Progressive Wave Theory of tides was postulated by:

(A) William Whewell

(B) R.A. Harris

(C) Dally

(D) Darwin

9) Which of the following straits connects Black sea and Sea of Marmara?

(A) Bering Strait

(B) Bosphorus Strait

(C) Mallava Strait

(D) Palk Strait

10) The theory of least cost location was proposed by

(A) Losch

(B) Isard

(C) Dicey

(D) Weber

11) Which one of the following is a 'Formal' Region?

(A) Delhi metropolitan region

(B) Hyderabad - Secunderabad region

(C) Delhi - Jaipur - Agra Triangle

(D) Assam - Valley

12) Which one of the following is most appropriate for showing frequency distribution?

(A) Bar graph
(B) Histogram
(C) Pie diagram
(D) Line graph

13) Who among the following geographers specifically emphasized on climatic determinism?

(A) Griffith Taylor
(B) Friedrich Ratzel
(C) Ellsworth Huntington
(D) Ellen Churchill Semple

14) The concept of 'Areal Differentiation' is also termed as

(A) Exceptionalism
(B) Chorological Study
(C) Systematic Geography
(D) Regionalism

15) The most common salt in the ocean is

(A) Calcium chloride
(B) Sodium nitrate
(C) Sodium chloride
(D) Calcium nitrate

16) Which one of the following indicates 'Random' distribution of settlements?

(A) 0.49
(B) 1.00
(C) 1.59
(D) 2.15

17) Which one of the following sequences of land use according to Von Thune's model is correct?

(A) Market gardening and fresh milk, firewood and lumber, intensive crop farming

(B) Firewood and lumber, intensive crop farming, market gardening and fresh milk

(C) Intensive crop farming, market gardening and fresh milk, firewood and lumber

(D) Market gardening and fresh milk, intensive crop farming, firewood and lumber

18) Who among the following developed the sequential expansion transport network model?

(A) De Souza and Porter

(B) Brown and Bracey

(C) Myrdal, Seers and Rostow

(D) Taaffe, Morrill and Gould

19) The concept of the Geographical Pivot of History was proposed by

(A) Mackinder   (B) Martin

(C) Kropotkin   (D) Ratzel

20) Which of the following categories does Chile belong to, according to shape?

(A) Fragmented

(B) Fragmented cum elongated

(C) Elongated

(D) Compact cum elongated

21) Bases of agro-climatic regionalization proposed by the Planning Commission of India?

(A) Relief, soil and drainage

(B) Rainfall, temperature and cropped area

(C) Vegetation, soil and land use

(D) Relief, land use and Net sown Area

22) Which one of the following is not the ingredient of sustainable development?

(A) Intergeneration transferability

(B) Social Justice

(C) Inter-regional Transferability

(D) Non-optimal resource utilization

23) The main species of the coniferous forests of the Himalayas between the altitudes 1600 metres and 3300 metres are

   (A) Cedar, Pine, Sine, Silver fir, Spruce

   (B) Sagon and Sakhu

   (C) Sandalwood, Rosewood

   (D) Oak, Chestnut Chir, Chil

24) The Bundelkhand plateau covers parts of which two of the following States?

   (A) Chhattisgarh & Jharkhand

   (B) Uttar Pradesh and Madhya Pradesh

   (C) Chhattisgarh and Uttar Pradesh

   (D) Madhya Pradesh & Chhattisgarh

25) The premise that present-day processes have been operating throughout geological time is the principle of

   (A) Continental drift   (B) Uniformitarianism

   (C) Earth Systems   (D) Plate Tectonics

26) Which one of the following is the altitudinal extant of Savannah Biome?

   (A) 0 to 20-degree North

   (B) 0 to 20-degree North and South

   (C) 0 to 20-degree South

   (D) 20 to 40-degree North and South

27) Which one of the following rock systems is the main source of coal in India?

   (A) Gondawana   (B) Cuddappa

   (C) Vindhyan   (D) Dharwar

28) Which one of the following statements is not correct?

(A) LANDSAT is a geo-stationary satellite

(B) IRS is a sun-synchronous satellite

(C) INSAT is a geo-stationary satellite

(D) SPOT is a sun-synchronous satellite

29) If the variability of rainfall is to be measured, which of the following techniques will be used?

(A) Mean Deviation   (B) Standard Deviation

(C) Coefficient of Variation   (D) Interquartile Range

30) Which of the following is not a Quantitative Distribution Map?

(A) Choroschematic Map   (B) Isopleth Map

(C) Dot Map   (D) Choropleth Map

31) Quasi Federal Form of Government is in

(A) U.S.A.   (B) Great Britain

(C) Russia   (D) India

32) The concept of 'Cultural landscape' was promoted by

(A) Ratzel   (B) Anne Buttimer

(C) Carl Sauer   (D) Wilbur Zelinsky

33) To which racial groups the Eskimos belong to?

(A) The Negroids   (B) The Mongoloids

(C) The Caucasoids   (D) The Australoids

34) "All history must be treated geographically and all geography must be treated historically." Who wrote this?

(A) Herodotus   (B) Ratzel

(C) Blache   (D) Davis

35) Which school of thoughts developed the Science of Astronomy?

(A) Greeks

(B) Chinese

(C) Roman

(D) Arabs

36) Match the following List - I with List - II and select the correct answer from the codes given:

List-I | List-II
(Geographer) | (Country)

a. Alexander Von Humboldt   i. France

b. Ellen Churchill Semple   ii. U.K.

c. Peter Haggett   iii. U.S.A.

d. Jeans Brunhes   iv. Germany

Codes:

	a	b	c	d
(A)	iv	ii	iii	i
(B)	i	ii	iii	iv
(C)	iv	iii	ii	i
(D)	ii	iii	i	iv

37) Salinity in water bodies increases with

(A) Increase in evaporation and decrease in admixture of fresh water.

(B) Decrease in evaporation and increase in admixture of fresh water.

(C) Decrease in evaporation and no change in admixture of fresh water.

(D) Increase in evaporation and increase in admixture of fresh water.

38) The climate of Southern Ganga plain in the Thornwaite classification is denoted by

(A) BA' W

(B) CA' W

(C) AA' W

(D) CW'W

39) Geographia in 17 volumes was written by

(A) Ptolemy

(B) Miletus

(C) Strabo

(D) Ritter

40) The concept of Lebensraum became popular in the discipline of political geography after the publication of

(A) Politische geographic

(B) Geographical pivot of history

(C) Political geography: world economy, nation-state and locality.

(D) Making political geography.

41) Where was the first textile mill established?

(A) Kolkata

(B) Mumbai

(C) Gujrat

(D) Lucknow

42) The infrared portion of EMR lies between

(A) 0.4-0.7 μm

(B) 0.5 mm to 1μm

(C) 0.7-1.3 μm

(D) 0.7 to 14 μm

43) Which of the following is the era of the origin of the continental shelf?

(A) Neozoic era

(B) Palaeozoic

(C) Mesozoic

(D) Cambrian

44) In India, markets in agriculture productions are regulated under the:

(A) Essential Commodities Act, 1955

(B) Agricultural Produce Act, 1937

(C) Food Product Order, 1956 and Food Products Order, 1973

(D) Agricultural Produce Market Committee Act enacted by States

45) Salinization occurs when the irrigation water accumulation in the soil evaporates, leaving behind salts and minerals. What are the effects of salinization on the irrigation land?

(A) It raises the water table

(B) It directly increases the crop production

(C) It makes some soils impermeable

(D) It fills the air spaces in the soil with water

46) When the wind is deflected due to rotation of the Earth, it is called as:
   (A) Geostrophic wind
   (B) Polar wind
   (C) Westerlies
   (D) Trade wind

47) Mid-ocean ridge is formed due to plate movement which is called:
   (A) Convergent movement
   (B) Divergent movement
   (C) Transform fault movement
   (D) Lateral Shipping plate movement

48) According to Walter Christaller, trade areas of cities are _____ in shape.
   (A) Circular   (B) Hexagonal
   (C) Rectangular   (D) Radial

49) Select the correct sequence in the chronological order of the following Greeks who have contributed vastly to the evolution of geographical thought during the ancient period:
   (A) Aristotle-Eratosthenes-Anaximander-Ptolemy
   (B) Eratosthenes-Anaximander-Ptolemy-Aristotle
   (C) Anaximander-Aristotle-Eratosthenes-Ptolemy
   (D) Ptolemy-Anaximander-Aristotle-Eratosthenes

50) Environment presents a range of opportunities and man is free to choose between them. This basic premise in geography is known as:
   (A) Determinism
   (B) Neo-determinism
   (C) Possibilism
   (D) Probabilism

PART - B

This part shall contains five questions, each question carrying ten marks.

[5×10=50]

1. Explain in detail about factors controlling the land forms development.
2. With suitable examples discuss how Geography is both a natural and also a social science.
3. Critically evaluate the use of GIS and remote sensing in natural resource management.
4. With neat diagrams critically explain the shifting of World Air pressure belts.
5. Discuss the human resources developments, measurements and indicators in India.

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ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಜೊತೆಗೆ 50 ಪ್ರಶ್ನೆಗಳನ್ನು ಹೊಂದಿರುವ ಮೊಹರು ಮಾಡಿದ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ನಿಮಗೆ ನೀಡಲಾಗಿದೆ.

2. ಕೊಟ್ಟಿರುವ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವು, ನೀವು ಪರೀಕ್ಷೆಗೆ ಆಯ್ಕೆ ಮಾಡಿಕೊಂಡಿರುವ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ್ದೇ ಎಂಬುದನ್ನು ಪರೀಕ್ಷಿಸಿರಿ.

3. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಮೊಹರನ್ನು ಜಾಗ್ರತೆಯಿಂದ ತೆರೆಯಿರಿ ಮತ್ತು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯಿಂದ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯನ್ನು ಹೊರಗೆ ತೆಗೆದು, ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಸಾಮಾನ್ಯ ಮಾಹಿತಿಯನ್ನು ತುಂಬಿರಿ. ಕೊಟ್ಟಿರುವ ಸೂಚನೆಯಂತೆ ನೀವು ನಮೂನೆಯಲ್ಲಿನ ವಿವರಗಳನ್ನು ತುಂಬಲು ವಿಫಲರಾದರೆ, ನಿಮ್ಮ ಉತ್ತರ ಹಾಳೆಯ ಮೌಲ್ಯಮಾಪನ ಸಮಯದಲ್ಲಿ ಉಂಟಾಗುವ ಪರಿಣಾಮಗಳಿಗೆ ವೈಯಕ್ತಿಕವಾಗಿ ನೀವೇ ಜವಾಬ್ದಾರರಾಗಿರುತ್ತೀರಿ.

4. ಪರೀಕ್ಷೆಯ ಸಮಯದಲ್ಲಿ:
   a) ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯನ್ನು ಜಾಗ್ರತೆಯಿಂದ ಓದಿರಿ.
   b) ಪ್ರತಿ ಪ್ರಶ್ನೆಯ ಕೆಳಗೆ ನೀಡಿರುವ ನಾಲ್ಕು ಲಭ್ಯ ಆಯ್ಕೆಗಳಲ್ಲಿ ಅತ್ಯಂತ ಸರಿಯಾದ/ ಸೂಕ್ತವಾದ ಉತ್ತರವನ್ನು ನಿರ್ಧರಿಸಿ.
   c) ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಸಂಬಂಧಿಸಿದ ಪ್ರಶ್ನೆಯ ವೃತ್ತಾಕಾರವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬಿರಿ. ಉದಾಹರಣೆಗೆ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8ಕ್ಕೆ "C" ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದರೆ, ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಬಳಸಿ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಕ್ರಮ ಸಂಖ್ಯೆ 8ರ ಮುಂದೆ ಈ ಕೆಳಗಿನಂತೆ ತುಂಬಿರಿ:

   ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8.Ⓐ Ⓑ ● Ⓓ (ಉದಾಹರಣೆ ಮಾತ್ರ) (ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರ ಉಪಯೋಗಿಸಿ)

5. ಉತ್ತರದ ಪೂರ್ವಸಿದ್ಧತೆಯ ಬರವಣಿಗೆಯನ್ನು (ಚಿತ್ತು ಕೆಲಸ) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಒದಗಿಸಿದ ಖಾಲಿ ಜಾಗದಲ್ಲಿ ಮಾತ್ರವೇ ಮಾಡಬೇಕು (ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾಡಬಾರದು).

6. ಒಂದು ನಿರ್ದಿಷ್ಟ ಪ್ರಶ್ನೆಗೆ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ವೃತ್ತಾಕಾರವನ್ನು ಗುರುತಿಸಲಾಗಿದ್ದರೆ, ಅಂತಹ ಉತ್ತರವನ್ನು ತಪ್ಪು ಎಂದು ಪರಿಗಣಿಸಲಾಗುತ್ತದೆ ಮತ್ತು ಯಾವುದೇ ಅಂಕವನ್ನು ನೀಡಲಾಗುವುದಿಲ್ಲ. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಉದಾಹರಣೆ ನೋಡಿ.

7. ಅಭ್ಯರ್ಥಿ ಮತ್ತು ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರು ನಿರ್ದಿಷ್ಟಪಡಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯ ಮೇಲೆ ಸಹಿ ಮಾಡಬೇಕು.

8. ಅಭ್ಯರ್ಥಿಯ ಪರೀಕ್ಷೆಯ ನಂತರ ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರಿಗೆ ಮೂಲ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆ ಮತ್ತು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಪ್ರತಿಯನ್ನು ಹಿಂದಿರುಗಿಸಬೇಕು.

9. ಅಭ್ಯರ್ಥಿಯ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ಮತ್ತು ಓ.ಎಂ.ಆರ್. ಅಭ್ಯರ್ಥಿಯ ಪ್ರತಿಯನ್ನು ತಮ್ಮ ಜೊತೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.

10. ಕ್ಯಾಲ್ಕುಲೇಟರ್, ಪೇಜರ್ ಮತ್ತು ಮೊಬೈಲ್ ಫೋನ್‌ಗಳನ್ನು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಒಳಗೆ ಅನುಮತಿಸಲಾಗುವುದಿಲ್ಲ.

11. **ಅಭ್ಯರ್ಥಿಯ ದುಷ್ಕೃತ್ಯದಲ್ಲಿ ತೊಡಗಿರುವುದು ಕಂಡುಬಂದರೆ, ಅಂತಹ ಅಭ್ಯರ್ಥಿಯನ್ನು ಕೋರ್ಸ್‌ಗೆ ಪರಿಗಣಿಸಲಾಗುವುದಿಲ್ಲ ಮತ್ತು ನಿಯಮಗಳ ಪ್ರಕಾರ ಇಂತಹ ಅಭ್ಯರ್ಥಿಯ ವಿರುದ್ಧ ಕ್ರಮ ಕೈಗೊಳ್ಳಲಾಗುವುದು.**

ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯನ್ನು ತುಂಬಲು ಸೂಚನೆಗಳು

1. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೆ ಒಂದೇ ಒಂದು ಅತ್ಯಂತ ಸೂಕ್ತವಾದ/ಸರಿಯಾದ ಉತ್ತರವಿರುತ್ತದೆ.

2. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ವೃತ್ತವನ್ನು ಮಾತ್ರ ನೀಲಿ ಅಥವಾ ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಮಾತ್ರ ತುಂಬತಕ್ಕದ್ದು. ಉತ್ತರವನ್ನು ಮಾರ್ಪಡಿಸಲು ಪ್ರಯತ್ನಿಸಬೇಡಿ.

3. ವೃತ್ತದೊಳಗಿರುವ ಅಕ್ಷರವು ಕಾಣದಿರುವಂತೆ ವೃತ್ತವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬುವುದು.

4. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿ ಯಾವುದೇ ಅನಾವಶ್ಯಕ ಗುರುತುಗಳನ್ನು ಮಾಡಬೇಡಿ.

Note : English version of the instructions is printed on the front cover of this booklet.