

Question Booklet No.

(To be filled up by the candidate by **blue/black ball-point pen**)

Roll No.

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Roll No. (Write the digits in words)

Serial No. of OMR Answer Sheet

Day and Date

(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only **blue/black ball-point pen** in the space above and on both sides of the **Answer Sheet**)

1. Within 10 minutes of the issue of the Question Booklet, Please ensure that you have got the correct booklet and it contains all the pages in correct sequence and no page/question is missing. In case of faulty Question Booklet, bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope.*
3. *A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided.*
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. *No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet No. on the Question Booklet.*
7. *Any changes in the aforesaid-entries is to be verified by the invigilator, otherwise it will be taken as unfair means.*
8. *This Booklet contains 40 multiple choice questions followed by 10 short answer questions. For each MCQ, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet. For answering any five short Answer Questions use five Blank pages attached at the end of this Question Booklet.*
9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed.* If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit *both OMR Answer Sheet and Question Booklet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

FOR ROUGH WORK

Research Entrance Test – 2013

No. of Questions : 50

Time : 2 Hours

Full Marks : 200

- Note :** (i) This Question Booklet contains 40 Multiple Choice Questions followed by 10 Short Answer Questions.
- (ii) Attempt as many MCQs as you can. Each MCQ carries 3 (Three) marks. 1 (One) mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question. If more than one alternative answers of MCQs seem to be approximate to the correct answer, choose the closest one.
- (iii) Answer only 5 Short Answer Questions. Each question carries 16 (Sixteen) marks and should be answered in 150-200 words. Blank 5 (Five) pages attached with this booklet shall only be used for the purpose. Answer each question on separate page, after writing Question No.

1. Most of the land precipitation and evaporation on earth takes place over the :
 - (1) land masses
 - (2) oceans and seas
 - (3) poles of the planet
 - (4) subtropical latitudes

2. The downstream portion of a river :
 - (1) generally becomes more sluggish
 - (2) usually has turbulent flows
 - (3) generally is of higher velocity, which is marked by reduced turbulence
 - (4) has lower discharges than do upstream portions

3. Which of the following is not a fatty acid ?
 - (1) Stearic acid
 - (2) Palmitic acid
 - (3) Oleic acid
 - (4) Phenyl acetic acid

4. Which of the following compounds is not an antibiotic ?
 - (1) Penicillin
 - (2) Chloramine-T
 - (3) Streptomycin
 - (4) Chloramphenicol

5. The acceleration with which a particle moves in a straight line, according to the law $v^2 = 4a(x \sin x + \cos x)$, v being the velocity of the particle at a distance x from a fixed point, is :
 - (1) 0
 - (2) $2ax \cos x$
 - (3) $4ax \cos x$
 - (4) $2ax \sin x$

6. If $\begin{bmatrix} 2 & 4 \\ 1 & 3 \end{bmatrix} A \begin{bmatrix} 0 & 2 \\ 1 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then the matrix A is :

(1) $\begin{bmatrix} 3 & -4 \\ 3/4 & -1 \end{bmatrix}$

(2) $\begin{bmatrix} -13/4 & 3/2 \\ 5/4 & -1/2 \end{bmatrix}$

(3) $\begin{bmatrix} -17/4 & 3/4 \\ -7/4 & -1/4 \end{bmatrix}$

(4) $\begin{bmatrix} 5/4 & 11/4 \\ 3 & -9/4 \end{bmatrix}$

7. If the error in the measurement of radius of sphere is 0.3%, then the percentage error in the measurement of its volume is :

(1) 0.15%

(2) 0.6%

(3) 0.9%

(4) 0.03%

8. The resistance of series combination of two resistances is S. When they are joined in parallel, the total resistance is P. If $S = nP$, then the minimum possible value of n is :

(1) 3

(2) 4

(3) 2.1

(4) 0.89

9. Mitochondria are associated with the function of :

(1) cellular digestion

(2) circulation

(3) protein synthesis

(4) cellular respiration

10. In which parts of eyes, rods and cones are present ?

(1) Retina

(2) Iris

(3) Cornea

(4) Lens

11. The doctrine of possibilism is associated with :
- | | |
|---------------------|------------------------|
| (1) Griffith Taylor | (2) Oskar spatte |
| (3) Jean Brunhes | (4) Vidal de la Blache |
12. The term 'cultural landscape' was first introduced in geography by :
- | | | | |
|-------------------|---------------------|------------------|----------------|
| (1) R. Hartshorne | (2) R. J. Johnstone | (3) A. Philbrick | (4) Carl Sauer |
|-------------------|---------------------|------------------|----------------|
13. The 'Limits to Growth' projects :
- | | |
|-----------------------|---------------|
| (1) Malthusianism | (2) Marxism |
| (3) Neo-Malthusianism | (4) Socialism |
14. The idea of 'geopolitics' was first introduced in geography by :
- | | |
|--------------------|----------------------|
| (1) Rudolf Kjellen | (2) Friedrich Ratzel |
| (3) K. Haushofer | (4) Harold Mackinder |
15. The book 'Nature of Geography' was written by :
- | | |
|------------------------|---------------------|
| (1) Preston James | (2) Richard Chorley |
| (3) Richard Hartshorne | (4) Brian Harley |
16. 'Law of Universal gravitation' is credited to :
- | | |
|--------------------|---------------------|
| (1) Isaac Newton | (2) Albert Einstein |
| (3) Charles Darwin | (4) Stephen Hawking |
17. Which one of the following pairs is not correctly matched ?
- | | | |
|--------------|---|-----------|
| (1) Pampas | - | Argentina |
| (2) Downs | - | Australia |
| (3) Prairies | - | Canada |
| (4) Llanos | - | U. S. A. |
18. Globe-Miami is famous for :
- | | |
|---------------------|----------------------|
| (1) Iron ore mining | (2) Copper mining |
| (3) Bauxite mining | (4) Manganese mining |

19. Which one of the following pairs is not correctly matched ?
- (1) Kudremukh – Karnataka
 (2) Bailadila – Chhattisgarh
 (3) Noamundi – Jharkhand
 (4) Gurumahisani – Maharashtra
20. 'Rank-size rule' was propounded by :
- (1) C. D. Harris (2) Mark Jefferson
 (3) G. K. Zipf (4) R. E. Dickinson
21. Who has propounded the 'Multiple Nuclei Theory' of Urban growth ?
- (1) H. Hoyt (2) E. W. Burgess (3) H. J. Nenson (4) C. D. Harris
22. $K = 7$ in Christaller's central place theory indicates :
- (1) Marketing Principle (2) Administrative Principle
 (3) Traffic Principle (4) Market-cum-Traffic
23. As per 2011 census the most urbanised State of India is :
- (1) Goa (2) Maharashtra (3) Mizoram (4) Tamil Nadu
24. As per latest UNDP report (2011) the rank of India in HDI is :
- (1) 127 (2) 134 (3) 124 (4) 97
25. The most leading producing state of groundnut in India is :
- (1) Gujarat (2) Andhra Pradesh (3) Karnataka (4) Maharashtra
26. The planetary orbits are not equidistantly spaced. The radius of each planet's orbit is $1\frac{1}{2}$ times greater than that of the planet adjacent to it on the inner side. This law is given by :
- (1) Newton (2) Kepler (3) Bode (4) Hipparchus
27. The most abundant element found in the earth's crust in terms of percent by weight is :
- (1) Iron (2) Aluminium (3) Silicon (4) Oxygen

28. Who supported and advocated "Dynamic equilibrium theory" of landscape development ?
 (1) W. D. Thornbary (2) J. T. Hack
 (3) L. C. Peltier (4) L. C. King
29. The rate of evaporation is proportionate to the vapour deficit. Firstly this was recognised by :
 (1) Darcy (2) Dalton (3) W. Smith (4) Fitzgerald
30. The concept of geostrophic wind is generally not valid within :
 (1) 10° latitude of the equator (2) 20° to 30° latitude
 (3) 40° to 50° latitude (4) Polar region
31. Amongst the following which one does not belong to the empirical climatic classification scheme ?
 (1) Koppen (2) Miller (3) Thornthwaite (4) Budyko
32. The 'Central Place Theory' was given by :
 (1) August Lösch (2) Walter Christaller
 (3) Brian Berry (4) Michael Dacey
33. The value of Human development index ranges in between :
 (1) 0 – 1 (2) 0 – 10 (3) 0 – 100 (4) 0 – 1000
34. Who is propounder of the theory of 'Cumulative Causation' ?
 (1) V. B. Stanberry (2) A. J. Herbertson
 (3) Gunnar Myrdal (4) I. Bowman
35. Which one of the following satellite image can be used for stereoscopic analysis :
 (1) Landsat (2) IRS (3) SPOT (4) NOAA
36. Resolution of Landsat TM mission 4 – 5 satellite is :
 (1) 30 meters (2) 60 meters (3) 90 meters (4) 120 meters

37. Who defined ecology as 'The study of the structure and function of ecosystems' ?
(1) E. Haeckel (2) E. P. Odum (3) F. Clements (4) C. C. Park
38. The first Earth summit was held at Rio de Janero in :
(1) 1972 (2) 1982 (3) 1992 (4) 2002
39. In which latitude the linear scale on mercator's projection is magnified four times ?
(1) $85\frac{1}{2}^{\circ}$ N & S (2) $75\frac{1}{2}^{\circ}$ N & S (3) $65\frac{1}{2}^{\circ}$ N & S (4) $55\frac{1}{2}^{\circ}$ N & S
40. Clinographic curve represents :
(1) Average slope between successive contours
(2) Average area between successive contours
(3) Average height between successive contours
(4) Average relative height between successive contours

Attempt any five questions. Write answer in 150-200 words. Each question carries 16 marks. Answer each question on separate page, after writing Question Number.

1. Explain the concept of 'New Environmentalism'.
2. Discuss 'the principle of terrestrial unity' in human geography.
3. Examine the relevance of 'Agricultural Location Theory' of Von Thunon in the present context.
4. Explain the concepts of under and over population.
5. Discuss the theory of 'Ice Crystal Process' of precipitation formation.
6. Describe the plate tectonic theory of mountain building.
7. Give an account of micro-level planning in India.
8. Mention the salient features of multisprectred remote sensing.
9. Discuss the consequence of population pressure on environmental degradation.
10. Illustrate the necessity of 'Second Green Revolution' in India.

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FOR ROUGH WORK

