

ENTRANCE EXAMINATION, 2013

M.Phil./Ph.D.
REGIONAL DEVELOPMENT

[Field of Study Code : GEOP
(142)/POPP (141)/ECNP (143)]

Time Allowed : 3 hours

Maximum Marks : 70

INSTRUCTIONS FOR CANDIDATES

- (i) Candidates should answer questions from only one of the three Parts given below, namely, Part—I (Geography : Code GEOP), Part—II (Population Studies : Code POPP) and Part—III (Economics : Code ECNP). They must indicate on cover page of the answer book CODE of the particular Part which they have answered inside. It must conform to the subject code indicated by them in their application form, failing which their answer books would get cancelled.
- (ii) Answer the multiple-choice questions by putting a circle around the letter (a. or b. or c. or d. or e.); for example, (a) representing the correct choice. Any ambiguity in circling (for example, circling more than one alphabet/number or circling the space between two alphabets/numbers) will lead to the answer being marked wrong.
- (iii) All questions must be answered in question paper itself.
- (iv) Calculators are allowed.
- (v) Four pages are attached at the end for Rough Work.

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M.Phil./Ph.D.
REGIONAL DEVELOPMENT

SUBJECT
(Field of Study/Language)

FIELD OF STUDY CODE

NAME OF THE CANDIDATE

REGISTRATION NO.

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CENTRE OF EXAMINATION

DATE

.....
(Signature of Candidate)

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(Signature of Invigilator)

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(Signature and Seal of
Presiding Officer)

PART—I

[GEOGRAPHY : Code GEOP (142)]

This Part has two Units. Unit—I comprises 20 multiple-choice questions carrying 1 mark each. The questions in Unit—II carry 5 marks each and are to be answered in the space provided. All questions are compulsory.

UNIT—I

Encircle the correct answer :

1. Which one of the following is not a part of plate tectonic system?
 - a. Lithosphere
 - b. Asthenosphere
 - c. Deep mantle
 - d. Outer core
2. The process of heat energy exchange (thermodynamic process) from vapour to ice is called
 - a. condensation
 - b. sublimation
 - c. deposition
 - d. freezing
3. Which one of the following is the right sequence of Albedo arranged in descending order?
 - a. Water—sand—grassy field—forest
 - b. Sand—water—grassy field—forest
 - c. Sand—grassy field—water—forest
 - d. Sand—grassy field—forest—water
4. At the sea level, what is the standard value of atmospheric pressure?
 - a. 1011.2 mb
 - b. 1012.2 mb
 - c. 1013.2 mb
 - d. 1014.2 mb

5. According to the law of the primate city (Mark Jefferson), what should be the ratio of population of three large cities?
- a. 10 : 5 : 2
 - b. 5 : 3 : 1
 - c. 8 : 4 : 2
 - d. 10 : 3 : 2
6. Which one of the following countries has the lowest total wheat production?
- a. China
 - b. Australia
 - c. USA
 - d. Argentina
7. Which one of the following countries in South Asia is the net gainer on account of international migration?
- a. Nepal
 - b. Sri Lanka
 - c. Bhutan
 - d. Pakistan
8. Which one of the following is not considered to be the main reason for the reemergence of the infectious diseases?
- a. Evolution of infectious disease microbes
 - b. Poverty
 - c. Travel
 - d. Overpopulation

9. Which one of the following is the right order indicating the position of satellite in terms of their altitudinal positions in descending order?

- A. IRS-I-B Satellite
- B. Geostationary Satellite
- C. Sun Synchronous Satellite
- D. GPS Satellite

a. A B C D

b. B A D C

c. B D A C

d. C A B D

10. Which one of the following States/Union Territories has highest literacy in 2011?

- a. Goa
- b. Nagaland
- c. Manipur
- d. Tripura

11. Which one of the following is not a part of the Data Structure in Geographical Information System?

- a. Point
- b. Polygon
- c. DEM
- d. Line

- 12.** Which one of the following figures (in percentage) is correct indicating the gap between male-female literacy in 2011 Census?
- a. 18.68
 - b. 17.68
 - c. 16.68
 - d. 15.68
- 13.** Which one of the following is the main tribal community living in Kanha National Park?
- a. Kol
 - b. Kodaku
 - c. Gadaba
 - d. Baiga
- 14.** 'Badami' is famous for which one of the following economic activities?
- a. Horticulture
 - b. Fishing
 - c. Mining
 - d. Tourism
- 15.** Backward linkages in industrial geography refers to which one of the following?
- a. Linkages from customers of output to supply of input
 - b. Linkages from a firm to its suppliers of inputs
 - c. Linkages from firm with other firms producing the same commodity
 - d. Linkages of customers of output to the firm

16. Which one of the following is correct description of boundary between Marina Island and Marina Trench?
- Ocean—Ocean divergence
 - Ocean—Ocean convergence
 - Continent—Continent convergence
 - Ocean—Continent divergence
17. The concept of 'Last Residence' in measuring internal migration in India was captured for the first time in which of the following Census?
- 1961
 - 1971
 - 1981
 - 1991
18. Which one of the following is not the major type of metamorphism?
- Regional metamorphism
 - Contact metamorphism
 - Seafloor metamorphism
 - Shock metamorphism
19. In which of the following urbanism is fully manifested?
- Break of bulk cities
 - Frontier cities
 - Edge cities
 - Metropolitan cities
20. A — is a species that has a disproportionately large effect on its environment related to its abundance. Such species play a critical role in maintaining the structure of an ecological community. Identify the species from the following.
- Ring species
 - Endangered species
 - Cryptic species
 - Keystone species

UNIT—II

Note : Illustrate your answers with the help of suitable maps and diagrams.

1. Who is a guest worker? Discuss the reasons for high concentration of guest workers in two regions of the world.

2. What is Kondratieff cycles of crises?

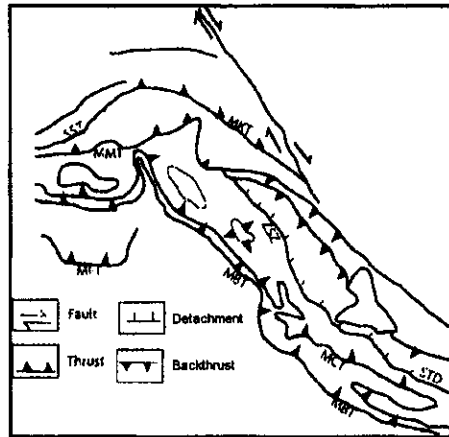
3. What is Epidemiologic Transition? Discuss the important characteristics of each stage.

4. "Culture is the agent, the natural area the medium, the cultural landscape the result." Who said this? Give a critical account of this statement.

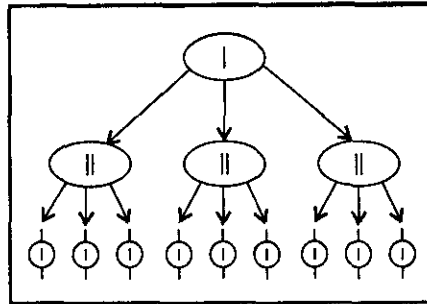
5. Discuss the context of ecological footprints in contemporary urbanization.

6. Who is an environmental refugee? What are the causes for the origin of environmental refugees? Illustrate your answer with suitable examples.

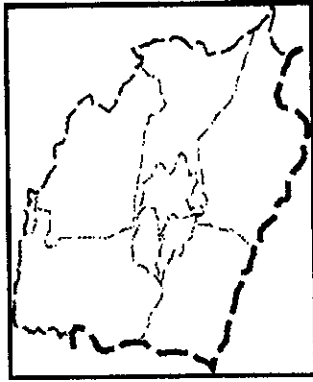
7. Discuss the geographical characteristics of the sketch and evolve a regional framework from the following :



8. Identify the planning model depicted in the following diagram. Discuss its salient features :



9. Identify the following region and discuss its socio-geographical features :



10.

	Column—A Rainfall (in mm)	Column—B Paddy Yield (in kg)
A	1108.3	1800
B	1685.2	1735
C	2006.8	2272
D	2589.6	1965
E	1752.1	2001
F	2622.9	2487
G	1803.4	1982
H	2240.8	2087
I	1938.7	1732
J	2408.6	2613
K	2333.4	2586

On the basis of data given in the table, answer the following :

- Prepare a Scattered diagram.
- Calculate the rate of change in Column—B when there is a unit change in Column—A.
- What will be estimated yield of paddy when average annual rainfall is 1708.1 mm?

PART—II

[POPULATION STUDIES : Code POPP (141)]

- (i) All questions are compulsory.
- (ii) Answers are to be given on the question paper itself.

SECTION—A

(Question Nos. 1 to 20 carry 1 mark each)

Encircle the correct answer :

1. According to the stages of demographic transition, India is in the stage where
 - a. fertility and mortality are high
 - b. fertility is low but mortality is high
 - c. fertility is high but mortality is low
 - d. fertility and mortality are low
2. In a country, CBR is 33 and CDR is 22. What is the (percentage) growth rate?
 - a. 1.2
 - b. 1.0
 - c. 1.1
 - d. 0.9
3. Post enumeration check (PEC) is generally conducted after a
 - a. census
 - b. survey
 - c. registration system
 - d. None of the above
4. Place of birth data are used for the study of
 - a. fertility
 - b. mortality
 - c. migration
 - d. None of the above
5. Who among these is **not** associated with migration theories?
 - a. Ravenstein
 - b. Lee
 - c. Hagerstrand
 - d. C. P. Blacker

6. If the annual population growth rate is 2 percent, the population will double in nearly
- 45 years
 - 35 years
 - 25 years
 - 15 years
7. The nature of epidemiological transition was described by
- A. R. Omran
 - A. Coale
 - R. Freedman
 - S. Preston
8. The spatial overflow of metropolitan population into peripheral urban fringe of villages is called
- metropolitanization
 - sub-urbanization
 - macrourbanization
 - None of the above
9. Population projections for India are usually constructed without considering
- mortality
 - fertility
 - migration
 - None of the above
10. Which of the following statements is correct?
- Central Place Model is associated with characteristics of residential house in cities.
 - Workers engaged in export activities are associated with urban hierarchy model.
 - Multiple Nuclei Model is associated with hexagonal market areas.
 - Few high-level metropolitan areas provide specialized functions for larger regions, while the smaller cities serve smaller regions, is associated with central place and urban hierarchy model.

11. The Boserup thesis contends that
- a. the world will not be able to feed all of its inhabitants
 - b. rising population levels will intensify agricultural production even on lands that were once considered unsuitable
 - c. the maintenance of soil fertility can only be accomplished through swidden agriculture
 - d. the controlled management of water is detrimental to intensive subsistence agriculture
12. City 1 (200,000 population) and City 2 (600,000 population) are 50 miles apart. According to gravity model, the breaking point (BP) or boundary marking the outer edge of their respective trade areas is
- a. 12.5 miles from each City
 - b. 18.3 miles from City 1
 - c. 28.9 miles from City 2
 - d. 32.3 miles from City 1
13. According to central place hierarchy theory in any country, one should find a few megalopolises and many towns, because of
- a. high threshold requirement for services available in megalopolises
 - b. high-range requirements for services available in megalopolises
 - c. high-range and low threshold required for services available in megalopolises
 - d. Both (a) and (b) together
14. In which State of India, urban population size of cities point out primate city hierarchy as per 2011 Census data?
- a. Bihar
 - b. Uttar Pradesh
 - c. Gujarat
 - d. Punjab
15. If the total fertility rate (TFR) in a population is 3.6, the net reproduction rate (NRR) must be
- a. 3.6
 - b. 1.8
 - c. less than 1.8
 - d. more than 1.8

16. The under-five mortality rate is given by which of the following life table functions?

a. ${}_5m_0$

b. ${}_5q_0$

c. ${}_4m_1$

d. ${}_4q_1$

17. A one-child policy was first introduced by

a. China

b. India

c. Indonesia

d. Thailand

18. The slogan 'Development is the best contraceptive' was first raised during the

a. Alma-Ata Conference

b. Beijing Conference

c. Bucharest Conference

d. Millennium Conclave

19. The proximate determinants framework was developed by

a. Bongaarts

b. Coale and Demeny

c. Davis and Blake

d. Keyfitz

20. Early childhood mortality can be estimated using

a. children ever born and children surviving method

b. intercensal survival method

c. reverse survival method

d. quasi-stable population method

SECTION—B

(Question No. 21 carries 10 marks)

21. Interpret the table given below such that important conclusions are drawn :

Percent of married women using contraception according to geographical area and wealth index

Area	Wealth Index		
	Low	Medium	High
North	41	59	65
East	47	46	49
West	11	10	21
South	3	4	15

SECTION—C

(Question Nos. **22** to **26** carry 2 marks each)

Write brief answers :

22. Discuss the uses of population pyramid.

23. What is demographic dividend?

24. Define crude birth rate. What are its limitations?

25. How is population growth rate calculated?

26. What is the meaning of replacement level of fertility?

SECTION—D

(Question Nos. **27** to **32** carry 5 marks each)

- 27.** Discuss briefly the population density patterns and their associations with economic activities in India.

28. What is IMR? What are the factors that influence it?

29. What are the key elements in the Population Policy of India, 2000?

- 30.** Critically discuss the statement, "As the Indian family programme focuses on sterilization, couples are deprived of choice in contraception."

31. Describe how female education influences fertility.

32. Describe the origin of human settlements considering site and situation parameters.

PART—III

[ECONOMICS : Code ECNP (143)]

SECTION—A

(Question Nos. 1-10 are compulsory)

Encircle the correct answer :

1×10=10

1. A Laffer curve indicates the relationship between
 - a. tax rate and government revenue
 - b. government revenue and government consumption
 - c. government revenue and private consumption
 - d. tax rate and private consumption
2. Which of the following was the largest source of foreign exchange inflows into the Indian economy in 2011-2012?
 - a. Net foreign investment inflows
 - b. Net earnings from export of software and other communication services
 - c. Net commercial borrowings
 - d. Net private transfers
3. Between 2001 and 2011, a country experienced an annual growth rate in national income of 5.4 per cent, and annual growth rates of imports, exports and population of 9.7, 12.1 and 1.3 per cent respectively. The growth rate of its per capita income was
 - a. 4 per cent
 - b. 2.4 per cent
 - c. 4.1 per cent
 - d. 3 per cent
4. Which of the following, divided by the population, is used as a measure of per capita income?
 - a. Gross national product at market price
 - b. Gross domestic product at market price
 - c. Net domestic product at market price
 - d. Net national product and factor cost
5. Shadow price refers to
 - a. the change in the value of the constraint per unit change in the objective function
 - b. the change in the value of the objective function per unit change in any of the constraints
 - c. the change in the value of the primal solution per unit change in the dual solution
 - d. any of the above
 - e. None of the above

6. "Efficiency wage theory" is built on the observation that
- the wage paid to the last worker hired should equal the value of the marginal product of the last worker hired
 - labour productivity depends on the effort a worker is willing to expend
 - workers will not shirk, and thus will produce efficiently, if they face a constant threat of layoff
 - to maximize efficiency, each worker should be paid a wage equal to the value of their marginal product
7. The 'Kuznets curve' describing the relationship between economic development and income inequality is a/an
- U-shaped curve
 - L-shaped curve
 - inverted U-shaped curve
 - convex to the origin curve
 - straight line
8. A firm encounters its 'shutdown point' when
- average total cost equals price at the profit-maximizing level of output
 - average variable cost equals price at the profit-maximizing level of output
 - average fixed cost equals price at the profit-maximizing level of output
 - marginal cost equals price at the profit-maximizing level of output
 - marginal cost is equal to zero
9. If the quantity of money is very sensitive to the interest rate
- the money demand curve will be relatively flat
 - a shift in money demand due to a change in income leads to small change in equilibrium interest rate
 - the LM curve is relatively flat
 - All of the above
10. Compared with the assumption that expected inflation is equal to actual inflation in the preceding period, the assumption of rational expectations implies that the transition to the new long-run equilibrium following a credible change in monetary or fiscal policy will take
- less time
 - more time
 - the same amount of time
 - Any of the above

SECTION—B

11. Write short notes on any *four* of the following (maximum word limit 50) : 2×4=8

- (a) Phillips Curve
- (b) Gini Coefficient
- (c) Repo and Reverse Repo rates
- (d) Pareto Optimality
- (e) Demographic dividend
- (f) Total Factor Productivity

SECTION—C

(Question Nos. 12–15 are compulsory)

Answer the following questions :

5×4=20

- 12.** There are 10000 identical individuals in the market for commodity X, each with a demand function given by $Qd_x = 12 - 2P_x$, and 1000 identical producers of commodity X, each with a supply function given by $Qs_x = 20P_x$.
- (a) Find the market demand function, and the market supply function for commodity X.
- (b) Obtain the equilibrium price and the equilibrium quantity mathematically.

- 13.** What is the characteristic root or eigenvalue of a matrix? Given the matrix A , find its eigenvalue. Using eigenvalue, find determinant and trace of the matrix

$$A = \begin{bmatrix} -2 & 2 \\ 2 & -4 \end{bmatrix}$$

14. An instructor of economics wished to determine the relationship of grades on a final examination to grades on two quizzes given during the semester. Calling X_1 , X_2 and X_3 the grades of a student on the first quiz, second quiz and final examination respectively, she made the following computations for the total of 120 students :

$$\begin{aligned}\bar{X}_1 &= 6.8 & \bar{X}_2 &= 7.0 & \bar{X}_3 &= 74 \\ s_1 &= 1.0 & s_2 &= 0.80 & s_3 &= 9.0 \\ r_{12} &= 0.60 & r_{13} &= 0.70 & r_{23} &= 0.65\end{aligned}$$

Find the least-square regression equation X_3 on X_1 and X_2 . Also estimate the final grades of two students whose respective scores on the two quizzes were (a) 9 & 7 and (b) 4 & 8.

15. Find the probability that in tossing a fair coin three times, there will appear
(a) three heads, (b) two tails and one head, (c) at least one head and (d) not more
than one tail.

SECTION—D

Answer any *four* of the following :

8×4=32

- 16.** What do you understand by the term 'agrarian crisis'? Explain the major factors behind agrarian crisis in India and its linkage with indebtedness.

17. The emphasis in recent plans has been on 'inclusive growth'. How would you assess India's recent record on 'inclusive growth'?

- 18.** There is some optimism that India was able to avert the impact of the recent global economic crisis. How would you analyse the impact of this crisis on recent Indian economic performance?

19. Evaluate the performance and impact of the National Rural Employment Guarantee Act.

20. Discuss the pattern of structural changes in the Indian economy. Do you think that there has been an 'excess growth' of the services sector in India?

- 21.** Based on your reading of the current year's budget, identify the core instruments that the government has chosen to address the twin problems of exploding current account deficit and a high fiscal deficit.

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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

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