

Candidate's Roll Number

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Serial No.

300153

Question Booklet

PLANNING

(Objective)

Time Allowed : 2 Hours

Maximum Marks : 100

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. This Question Booklet contains **125** questions in all.
2. **All** questions carry equal marks.
3. Attempt **all** questions.
4. **Immediately after commencement of the examination, you should check up your Question Booklet and ensure that the Question Booklet Series is printed on the top right-hand corner of the Booklet and the Booklet contains 20 printed pages and no page or question is missing or unprinted or torn or repeated. If you find any defect in this Booklet, get it replaced immediately by a complete Booklet of the same series.**
5. You must write your Roll Number in the space provided on the top of this page. Do not write anything else on the Question Booklet.
6. An Answer Sheet will be supplied to you separately by the Invigilator to mark the answers. **You must write your Name, Roll No. and other particulars on the first page of the Answer Sheet provided, failing which your Answer Sheet will not be evaluated.**
7. You will encode your **Roll Number** and the **Question Booklet Series A, B, C or D** as it is printed on the top right-hand corner of this Question Booklet with Black/Blue ballpoint pen in the space provided on **Page-2** of your Answer Sheet. **If you do not encode or fail to encode the correct series of your Question Booklet, your Answer Sheet will not be evaluated correctly.**
8. Questions and their responses are printed in English only in this Booklet. Each question comprises **four** responses—(A), (B), (C) and (D). You are to select **ONLY ONE** correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
9. In the Answer Sheet, there are **four** brackets—(A), (B), (C) and (D) against each question. To answer the questions you are to **mark with Black/Blue ballpoint pen ONLY ONE** bracket of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. **Any erasure or change is not allowed.**
10. You should not remove or tear off any sheet from the Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the examination. **After the examination has concluded, you must hand over your Answer Sheet to the Invigilator.** Thereafter, you are permitted to take away the Question Booklet with you.
11. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.

SEAL

1. Industrialization and rapid urbanization have created
 - (A) urban generation
 - (B) rural depopulation
 - (C) urban decay
 - (D) rural regeneration
2. The settlement of the Gangetic plain may be called
 - (A) clustered settlement
 - (B) wet point settlement
 - (C) dry point settlement
 - (D) isolated settlement
3. Occupancy rate refers to the
 - (A) number of person-habitable rooms per acre
 - (B) number of person-habitable rooms per unit area
 - (C) number of persons per habitable rooms
 - (D) number of persons working in an office
4. Cadastral map shows
 - (A) waterbodies
 - (B) vegetation
 - (C) land ownership
 - (D) crop pattern
5. A good way to measure the quality of life in countries across the world is by comparing their
 - (A) gross national income
 - (B) sustainable development
 - (C) per capita income
 - (D) human development index
6. Which one of the following industries is called as heavy engineering industry?
 - (A) Heavy machinery
 - (B) Iron and steel
 - (C) Glass
 - (D) Heavy electricals
7. Of late, the major focus in urban industrial development is of
 - (A) cluster development
 - (B) nodal development
 - (C) port city oriented development
 - (D) None of the above
8. Assertion (A) :
 Losch believed that price increase is result of transport cost and by rating the demand curve around the production point *P*, the shape of market area is seen to be circular.
 Reasons (R) :
 Losch treated each section as having separate range, threshold, hexagonal hinterland.
 - (A) Both A and R are true but R is NOT the correct explanation of A
 - (B) Both A and R are true and R is the correct explanation of A
 - (C) A is false but R is true
 - (D) A is true but R is false

9. 'Save Silent Valley' Movement, a social movement to save the tropical green forest from destruction for a regional development project, was territorially faced in Indian State of

- (A) West Bengal
- (B) Kerala
- (C) Gujarat
- (D) Bihar

10. Match List-I with List-II :

List-I	List-II
a. Chipko	i. Gujarat
b. Save Silent Valley	ii. Uttarakhand
c. Narmada Bachao	iii. Kerala
d. Jungle Bachao	iv. Jharkhand

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

11. Match the books in Group-I with their authors in Group-II :

Group-I	Group-II
P. <i>Space, Time and Architecture</i>	1. Jane Jacobs
Q. <i>Form, Space and Order</i>	2. Kevin Lynch
R. <i>The Death and Life of Great American Cities</i>	3. Ian McHarg
S. <i>The Image of the City</i>	4. Francis D. K. Ching
	5. Giedion S.

- (A) P-5, Q-3, R-1, S-2
- (B) P-2, Q-5, R-3, S-4
- (C) P-2, Q-5, R-1, S-3
- (D) P-5, Q-2, R-1, S-3

12. A classroom of 12 m × 25 m × 4 m requires 3 air changes per hour. At an air velocity of 2 m/s, the necessary duct cross-section (in m²) is

- (A) 1.00
- (B) 1.5
- (C) 0.50
- (D) 0.75

13. The best location for laying the main sewer line on a flat land is

- (A) under the central verge
- (B) under the open space along sidewalk
- (C) under the road
- (D) under the sidewalk

14. A sanitary landfill is provided with High Density Poly Ethylene (HDPE) lining along the ground surface. This is provided primarily to prevent

- (A) rodents
- (B) plant growth
- (C) bleaching
- (D) leaching

15. Which of the following parameters is essential to estimate the Envelope Performance Factor (EPF) of a building as per the Energy Conservation Building Code (ECBC), 2011?

- (A) Maximum and minimum monthly temperature
- (B) Building occupancy duration
- (C) Building type
- (D) Maximum humidity

16. The purchase price of BHK flat rises 10 percent. The demand for such flats is observed to decrease by 8 percent. The given elasticity of the housing demand for 2010–11 (flat is rounded off to one decimal place) is

(A) 8
(B) 80
(C) 0.08
(D) 0.8



17. A cone, with a base of 10 cm diameter and axis of 12 cm, is lying on horizontal plane (HP) along its generator. The internal angle which is the base of the cone makes with HP is

(A) 67.6°
(B) 37.6°
(C) 67°
(D) 7.6°

18. A room having dimension $12\text{ m} \times 10\text{ m} \times 3.5\text{ m}$ is required to be mechanically ventilated by air-conditioner. The temperature difference of outdoor ambient air and the supply air is 12°C . Consider three air exchanges per hour. The volumetric specific heat of the air is 1250 J/m^3 . Assume one ton of refrigeration (TR) is equal to 3.5 kW . The capacity of the air-conditioner for the room in TR will be

(A) 0.5
(B) 3.5
(C) 2.5
(D) 1.5

19. A residential area of 20 hectares is planned for three different types C4 plots of 500 m^2 , 300 m^2 and 200 m^2 with numbers of plot in each category are 100, 120, 150 respectively. The rest of the area is allowed for roads and facilities such as schools, shops and parks. Each plot has one dwelling unit and the average household size is 5 persons. The net residential density of the area in person per hectare is

(A) 80
(B) 60
(C) 16
(D) 160

20. As per the Handbook on Barrier Free and Accessibility, CPWD–2014, match the design guidelines in Column-I with their appropriate standards in Column-II and select the appropriate option :

Column-I	Column-II
P. Minimum clear width of ramp	1. 600 mm
Q. Maximum height of wash basin (rim) above finished floor level	2. 1500 mm
R. Minimum length of grab rail	3. 750 mm
S. Minimum clear width for manoeuvring space (wheel chair)	4. 900 mm
	5. 1800 mm

(A) P–5, Q–3, R–1, S–2
(B) P–1, Q–4, R–3, S–2
(C) P–3, Q–4, R–1, S–5
(D) P–5, Q–3, R–2, S–4

21. The Golden Ratio refers to

- (A) 1 : 1
- (B) 16 : 9
- (C) $1 : \sqrt{2}$
- (D) $(1 + \sqrt{5}) : 2$

22. As per the United Nations Transforming Our World, the 2030 Agenda for Sustainable Development, 2015, which of the following Sustainable Development Goals (SDGs) directly address(es) water-related issues?

- P. SDG-1
- Q. SDG-4
- R. SDG-6
- S. SDG-14

- (A) R
- (B) S
- (C) P, Q
- (D) R, S

23. Which of the following is a part of studio apartment?

- (A) Multipurpose space
- (B) Children room
- (C) Master bedroom
- (D) Artistic room

24. Development plan includes

- (A) master plan and city development plan
- (B) regional plan
- (C) master plan
- (D) city development plan

25. The solar protection system consisting of fixed slats or grids, outside a building facade in front of openings, is known as

- (A) malqaf
- (B) trombe wall
- (C) brise-soleil
- (D) solarium

26. The Town and Country Planning Organization was set up in India in 1962 with the merger of which of the following institutes?

- (A) TPO and the Ministry of Urban Affairs
- (B) TPO and the Central Regional and Urban Planning Organization
- (C) TPO and RBI
- (D) TPO and the Ministry of Urban Development



27. Assuming other variables remaining constant, the tropical summer index

- (A) decreases with increase in globe temperature
- (B) increases with increase in vapor pressure
- (C) increases with increase in air velocity
- (D) decreases with increase in wet-bulb temperature

28. Match the units provided in Column-I with their corresponding items in Column-II and select the appropriate option :

Column-I	Column-II
P. dB	1. Sound intensity
Q. phon	2. Absorption of sound
R. W/m^2	3. Frequency of sound
S. sabin	4. Loudness
	5. Sound pressure level

- (A) P-1, Q-2, R-3, S-4
 (B) P-5, Q-4, R-1, S-2
 (C) P-5, Q-1, R-4, S-3
 (D) P-2, Q-3, R-4, S-5

29. Who wrote the book, *Growth Pole and Growth Centre for Regional Economic Development in India*?

- (A) Sdasyuk and Sengupta
 (B) Sen and Wanmali
 (C) Sundaram and T. B. Lahiri
 (D) Rameshwar Prasad Mishra

30. Who suggested new method to measure regional imbalances in development and allocation of funds to States of India?

- (A) A. Kundu
 (B) Raghu Rajan
 (C) Ashok Dutta
 (D) A. Mitra

31. In Critical Path Method (CPM) for time scheduling, 'forward pass calculation' is carried out for determining

- (A) late start and late finish time
 (B) early start and late finish time
 (C) late start and early finish time
 (D) early start and early finish time

32. When the ambient lapse rate is greater than the dry adiabatic lapse rate, the atmosphere is said to be

- (A) negative adiabatic lapse rate
 (B) adiabatic lapse rate
 (C) subadiabatic lapse rate
 (D) superadiabatic lapse rate

33. As per the Noise Pollution (Regulation and Control) Rules, 2000 of India, the day-time noise limit for a residential zone expressed in dB(A) L_{eq} is

- (A) 60
 (B) 50
 (C) 55
 (D) 65

34. Emergency preparedness for risk reduction does not include

- (A) relief
- (B) revision of code
- (C) rescue
- (D) rehabilitation

35. Waste removal system was established in which of the following cities for the first time?

- (A) Paris
- (B) London
- (C) Athens
- (D) Lahore

36. Which of the following solid wastes describes the term Municipal Solid Waste?

- (A) Non-toxic
- (B) Non-hazardous
- (C) Toxic
- (D) Hazardous

37. The scale applied in statistics, which imparts a difference of magnitude and proportions, is considered as

- (A) ratio scale
- (B) satisfactory scale
- (C) exponential scale
- (D) goodness scale

38. If the mean and mode of some data are 6 and 12 respectively, its median will be

- (A) 9
- (B) 10
- (C) 8
- (D) None of the above

39. If the standard deviation of 10, 11, 12, 13, ..., 19 is X , then the standard deviation of 100, 101, 102, 103, ..., 109 will be

- (A) $100X$
- (B) $100 + X$
- (C) X
- (D) $10000X$

40. If the arithmetic mean and harmonic mean of some data are 343 and 7 respectively, then its geometric mean will be

- (A) 28
- (B) 49
- (C) 14
- (D) 21

41. As per the National Building Code (NBC), at what depth all foundations shall extend from ground level?
- (A) 0.4 m
(B) 0.5 m
(C) 0.2 m
(D) 0.3 m
42. For the design of retaining walls, the minimum factor of safety against overturning is taken as
- (A) 1.5
(B) 3
(C) 2
(D) 1.4
43. The purpose of the hooked ends on reinforcement bars in concrete lintels is to
- (A) combat tension
(B) increase rod strength
(C) resist compression
(D) prevent the rods from slipping
44. When a curved wall is to be built to a radius of 1.5 m, the most suitable bond would be
- (A) English
(B) Flemish
(C) stretcher
(D) header
45. The piece of brick cut along the centre of width in such a way that its length is equal to that of full brick, is called
- (A) king closer
(B) beveled closer
(C) half brick
(D) queen closer
46. Spatial connectedness in GIS refers to
- (A) topiary
(B) topology
(C) tomography
(D) topography
47. As per the Census of India, 2011, Nagar Panchayat refers to
- (A) rural area adjacent to a nagar
(B) urban area with a statutory local government
(C) rural area surrounded by a growing city
(D) urban area within a panchayat
48. Indore Slum Networking Programme has been planned by
- (A) Anil Laul
(B) Himanshu Parikh
(C) B. V. Doshi
(D) Dulal Mukherjee
49. Map is an
- (A) axonometric projection
(B) oblique projection
(C) isometric projection
(D) orthographic projection

50. In mass transportation, LRTS stands for

- (A) Light Rail Transportation System
- (B) Linear Rail Transportation System
- (C) Light Rail Transit System
- (D) Linear Rail Transit System

51. AMRUT, the new scheme launched by the Government of India, stands for

- (A) Atal Mission for Redevelopment of Urban Transportation
- (B) Atal Mission for Renewal and Urban Transformation
- (C) Atal Mission for Rejuvenation and Urban Transformation
- (D) Atal Mission for Renewal of Urban Transportation

52. Development Authorities in India are established under the provision of the

- (A) Town and Country Planning Act
- (B) Land Acquisition Act
- (C) Municipal Act
- (D) 74th Constitutional Amendment Act

53. In India, the term 'Town Planning Scheme' refers to

- (A) land reclamation
- (B) land readjustment
- (C) land renewal
- (D) land rejuvenation

54. During the construction of tall buildings, the equipment used for hoisting building materials to the upper floors is a

- (A) gantry crane
- (B) tower crane
- (C) goods lift
- (D) capsule lift

55. What is the earliest start time rule?

- (A) It directs when a project can start
- (B) It regulates when a project must begin
- (C) It compares the activity's starting time for an activity successor
- (D) It compares the activity's end time for an activity predecessor

56. A 'cul-de-sac' is a street where

- (A) pedestrians are not permitted
- (B) vehicles are permitted to move in one direction only
- (C) only two-wheelers are permitted
- (D) through traffic is discouraged

57. Increase in the volume of fine aggregate due to the pressure of moisture is called

- (A) bending
- (B) twisting
- (C) bulking
- (D) buckling

58. The surface run-off is the quantity of water
- (A) intercepted by buildings and vegetative cover
 - (B) that reaches the stream channels
 - (C) required to fill surface depressions
 - (D) All of the above
59. Panchayati Raj is a
- (A) three-tier system
 - (B) four-tier system
 - (C) two-tier system
 - (D) None of the above
60. The Planning Commission was established in the year
- (A) 1950
 - (B) 1965
 - (C) 1947
 - (D) 1948
61. Which of the following is **not** a function of a good mulch?
- (A) Encourage weed growth
 - (B) Improve landscape appearance
 - (C) Aid in water retention
 - (D) Prevent soil temperature fluctuations
62. 'Mihrab' is found
- (A) on the west wall of a mosque
 - (B) in the stepped well of Gujarat
 - (C) inside wall of a mausoleum
 - (D) on the crown of minaret
63. Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs is termed by UNDP is
- (A) human development
 - (B) sustainable development
 - (C) comprehensive development
 - (D) equitable development
64. The Government of India's Urban Development Program 'HRIDAY' stands for
- (A) Heritage City Development and Augmentation Yojana
 - (B) Heritage City Improvement and Development Aawas Yojana
 - (C) Heritage Rejuvenation Implementation Development Aayog Yojana
 - (D) Heritage Review Implementation Development Augmentation Yojana
65. Which of the following commands in AUTOCAD is used to create 3D solid between various cross-sections?
- (A) XLINE
 - (B) PFACE
 - (C) LOFT
 - (D) MESH

66. The method in which edge or surface is divided into small number of parts and projection is transferred for each point is called
- (A) drawing auxiliary view of a curved surface
 - (B) drawing auxiliary view of an opposite surface
 - (C) drawing auxiliary view of an inclined surface
 - (D) drawing auxiliary view of an equal surface
67. For DPC at the plinth level, which grade of concrete is used?
- (A) M20
 - (B) M15
 - (C) M10
 - (D) M25
68. Grand Innovation Challenge was initiated by
- (A) Planning Commission
 - (B) Ministry of Housing and Urban Affairs
 - (C) NITI Aayog
 - (D) ITPI
69. Which one is **not** included in sectoral planning?
- (A) Hill area
 - (B) Plane area
 - (C) Transportation
 - (D) Infrastructure
70. As per CPCB, how much solid waste is generated per capita per day in large cities?
- (A) 2100 g
 - (B) 2800 g
 - (C) 250 g
 - (D) 500 g
71. The effect of a force on a body depends upon
- (A) direction
 - (B) position or line of action
 - (C) magnitude
 - (D) All of the above
72. Which is the right sequence of planners on the Anglo-American tradition?
- (A) Unwin, Howard, Perry, Geddes
 - (B) Howard, Perry, Geddes, Unwin
 - (C) Perry, Geddes, Unwin, Howard
 - (D) Geddes, Unwin, Howard, Perry
73. The form of the roof of a house depends mainly on
- (A) geographical conditions
 - (B) sociological conditions
 - (C) geological conditions
 - (D) climatic conditions

74. The average weight of A, B, C is 45 kg. If the average weight of A and B is 40 kg and that of B and C be 43 kg, then the weight of B is
- (A) 32 kg
 - (B) 33 kg
 - (C) 30 kg
 - (D) 31 kg
75. Shyam has a newspaper route. Each morning he delivers 37 newspapers to customers in his neighborhood. It takes Shyam 50 minutes to deliver all the newspapers. If Shyam is sick or has other plans, his friend Ram, who lives on the same street, will sometimes deliver the newspapers for him.
- Which of the following is correct for the above situation?
- (A) It is dark outside when Shyam begins his deliveries
 - (B) Ram would like to have his own newspaper route
 - (C) Shyam and Ram live in the same neighborhood
 - (D) It takes Ram more than 50 minutes to deliver the newspapers
76. The coagulant which is generally **not** used for treating the sewage, is
- (A) sulphate
 - (B) chlorinated copper
 - (C) alum
 - (D) ferric chloride
77. What is the average design hydraulic retention time for domestic wastewater in a septic tank?
- (A) 48 hours
 - (B) 12 hours
 - (C) 2 hours
 - (D) 24 hours
78. Biochemical Oxygen Demand (BOD) of safe drinking water must be
- (A) 7
 - (B) 0
 - (C) 5
 - (D) 10
79. Water requirement per head per day for average domestic purposes, as per IS : 1172-1963, is
- (A) 135 litres
 - (B) 20 litres
 - (C) 60 litres
 - (D) 250 litres
80. Which term is referred for the total amount of material carried by the water of a stream or river?
- (A) Carrying discharge
 - (B) Load
 - (C) Carrying capacity
 - (D) Capacity competence

81. Surge tanks are used
- (A) in overflow valves
 - (B) to guard against water hammer
 - (C) for storage water
 - (D) to increase the velocity in a pipeline

82. Which of the following is rock?

- (A) Mica
- (B) Gypsum
- (C) Quartz
- (D) None of the above

83. The strength of the timber is maximum when it is

- (A) 45° to the grain
- (B) perpendicular to the grain
- (C) parallel to the grain
- (D) None of the above

84. Who had initiated the term 'megapolis'?

- (A) Sir Patrick Geddes
- (B) J. Gottman
- (C) Le Corbusier
- (D) Sir Ebenezer Howard

85. The head of average proportioned human figure is

- (A) 1/8 of overall body height
- (B) 1/7 of overall body height
- (C) 1/10 of overall body height
- (D) 1/9 of overall body height

86. The statement related with dwelling units per acre of land area actually in use or proposed to be used for residential purpose is

- (A) Gross Residential Density (GRD)
- (B) Average Residential Density (ARD)
- (C) Net Residential Density (NRD)
- (D) Overall Neighbourhood Density (OND)

87. Match the Five-Year Plans with their main features :

P. First Five-Year Plan	1. Introduction of JNNURM
Q. Fourth Five-Year Plan	2. Passing of the Urban Land Ceiling and Regulation Act
R. Seventh Five-Year Plan	3. Announcement of the National Housing Policy
S. Tenth Five-Year Plan	4. Formation of HUDCO
	5. Establishment of TCPO

- (A) P-4, Q-1, R-2, S-5
- (B) P-3, Q-4, R-1, S-5
- (C) P-5, Q-4, R-3, S-1
- (D) P-5, Q-1, R-4, S-2

88. Match the terms in Group-I with the appropriate items in Group-II :

Group-I	Group-II
P. Toposheet	1. Path/Row
Q. Satellite	2. Contour
R. Wavelength	3. Focal length
S. Scan line	4. Spectral signature
	5. Bits/Inch

- (A) P-2, Q-4, R-1, S-5
(B) P-2, Q-1, R-4, S-5
(C) P-5, Q-4, R-2, S-1
(D) P-3, Q-4, R-1, S-5
89. In 2010, the Government of India has made mandatory provision for all government buildings
- (A) GRIHA 4-Star
(B) GRIHA 5-Star
(C) GRIHA 2-Star
(D) GRIHA 3-Star
90. Individual parking space for scooter is
- (A) 2 sq. m
(B) 2.5 sq. m
(C) 1 sq. m
(D) 1.25 sq. m
91. Hooke's law is valid up to
- (A) plastic limit
(B) yield point
(C) elastic limit
(D) proportional limit

92. Forces are called coplanar when all of them acting on body lie in

- (A) different planes
(B) perpendicular plane
(C) one point
(D) one plane

93. Forces are called concurrent when their lines of action meet in

- (A) plane
(B) different planes
(C) one point
(D) two points

94. A force acting on a body may

- (A) balance the other forces acting on it
(B) retard the motion
(C) introduce internal stresses
(D) All of the above

95. As on 2018, right to property is a

- (A) constitutional right
(B) tertiary right
(C) fundamental right
(D) secondary right

96. A force is completely defined when we specify
- direction
 - point of application
 - magnitude
 - All of the above
97. Hooke's law states that stress and strain are
- inversely proportional
 - curvilinear proportional
 - directly proportional
 - All of the above
98. One hectare is equal to
- 4048 sq. m
 - 10000 sq. m
 - 4000 sq. m
 - 4840 sq. m
99. The crushing strength of good building stone should be more than (in MPa)
- 150
 - 200
 - 50
 - 100
100. Which of the following is **not** a land-use zone?
- Commercial
 - Heritage
 - Industrial
 - None of the above
101. The moisture content in well-seasoned timber is
- 10% to 12%
 - 15% to 20%
 - 4% to 5%
 - None of the above
102. The crushing strength of the first-class brick should not be less than (in N/mm^2)
- 10.5
 - 14.0
 - 3.5
 - 7.0
103. As compared to field rivets, the shop rivets are
- weaker
 - equally strong
 - stronger
 - Any of the above
104. Normal consistency of ordinary Portland cement is about
- 40%
 - 10%
 - 20%
 - 30%
105. Le Chatelier device is used for determining the
- soundness of cement
 - tensile strength of cement
 - setting time of cement
 - None of the above

106. 'Folk, Work, Place' concept was given by

- (A) Ebenezer Howard
- (B) Doxiadis
- (C) Le Corbusier
- (D) Patrick Geddes



107. The point at which the eyes of observer are located S and S' indicated respectively the TV and FV of S , is

- (A) exit point
- (B) vanishing point
- (C) station point
- (D) piercing point

108. Sectoral planning **does not** include

- (A) hill area
- (B) infrastructure
- (C) irrigation
- (D) transport

109. Who wrote, *The Population Bomb*?

- (A) Meadows
- (B) Amartya Sen
- (C) Ehrlich
- (D) None of them

110. The concept of spread and backwash effects was introduced by

- (A) Gunnar Myrdal
- (B) Samir Amin
- (C) A. O. Hirschman
- (D) Gunder Frank

111. Which of the following regions has been classified as the 'Western Dry Region' by the Planning Commission?

- (A) West Bengal Duars
- (B) North Bihar Dry Region
- (C) Rajasthan Dry Region
- (D) NEFA Region

112. After Independence, at which level the first attempt for planning of rural development was made on?

- (A) Tehsil level
- (B) Panchayati level
- (C) Block level
- (D) District level

113. The ratio of town area to agricultural land area as suggested by Sir Ebenezer Howard in 'Garden City' concept is

- (A) 10
- (B) 5
- (C) 20
- (D) 15

114. The major objective behind the identification of five counter magnet cities outside the National Capital Region was

- i. to further strengthen policies for decentralization of economic activities within and outside the NCR
- ii. to further strengthen policies for decentralization of population within and outside the NCR
- iii. to further strengthen the availability of physical infrastructure facilities within and outside the NCR
- iv. to further strengthen health and medical care services outside the NCR

Choose the correct answer from the code given below.

- (A) i and ii
(B) i, ii and iv
(C) i and iii
(D) i, iii and iv

115. 'Sight distance' is considered in the design of

- (A) open kitchen
(B) auditorium
(C) road intersection
(D) fenestration

116. Which of the following is **not** correct?

- i. V. Nath divided India into 15 macroregions
- ii. Ashok Mitra divided India into 5 macroregions
- iii. Prakash Rao and L. S. Bhatt divided the country into macroregions
- iv. Chandrashekhar divided India into 13 microregions

- (A) i only
(B) iii only
(C) i and iv
(D) iv only

117. Who among the following conceived the idea of shipping canal between India and Sri Lanka?

- (A) Farrell
(B) A. D. Taylor
(C) Luna Leopold
(D) C. J. Barrow

118. Match the following List-I with List-II and select the correct answer from the codes given below :

List-I (Ackerman-population resource region)	List-II (Name of countries)
a. Brazilian type	i. India
b. Egyptian type	ii. Japan
c. European type	iii. Latin America
d. US type	iv. Australia

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

119. The Gobi Desert lacks economic development. The reason is
- (A) the continental climate and remoteness
 - (B) the mongoloid people are not motivated politically
 - (C) the inaccessibility of the region
 - (D) the sand dunes that have inhibited transport development
120. Arrange the following stages for the growth of urban area :
- i. Regional metropolis
 - ii. Economic maturation
 - iii. Export specialization
 - iv. Export complex
 - v. Technical professional virtuosity
- (A) ii, iv, iii, v, i
 - (B) v, i, ii, iii, iv
 - (C) i, iii, iv, v, ii
 - (D) iii, iv, ii, i, v
121. Alonso model is
- (A) a type of iconic model used to forecast weather
 - (B) a type of statistical derivation
 - (C) a model to explain the pattern to land use and land value in urban areas
 - (D) None of the above
122. Statutory setback of a building depends on
- (A) width of access road
 - (B) ground coverage
 - (C) building height
 - (D) property boundary
123. The Pritzker Prize, 2021 has been awarded to
- (A) Francis Kéré
 - (B) Frei Otto
 - (C) Anne Lacaton and Jean-Philippe Vassal
 - (D) Balkrishna Doshi
124. Superplasticizer is added in a concrete mix to
- (A) reduce the flow
 - (B) reduce the content of coarse aggregate
 - (C) reduce the water-cement ratio for a given workability
 - (D) increase the water-cement ratio for a given workability
125. Which one of the following forms of settlement develops along either side of roads, rivers or canals?
- (A) Linear
 - (B) Square
 - (C) Circular
 - (D) Cross-shaped