

MAH M Arch CET Settlement Design and Planning

Sample Paper – 7

Total Questions	Total Marks	Duration	Exam Mode
10	20	12 Minutes	CBT (Online)

Instructions

- This paper contains 10 Multiple Choice Questions (Single Correct Answer), modelled on the Settlement Design and Planning portion of MAH M Arch CET entrance.
- Each correct answer carries +2 marks. There is no negative marking for incorrect or unattempted answers.
- Only one option is correct. Choose carefully.
- Syllabus: Settlement patterns, urban planning, housing typologies, land use, transport, government schemes, and planning standards.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Section D | Settlement Design and Planning | 10 Questions × 2 Marks = 20 Marks

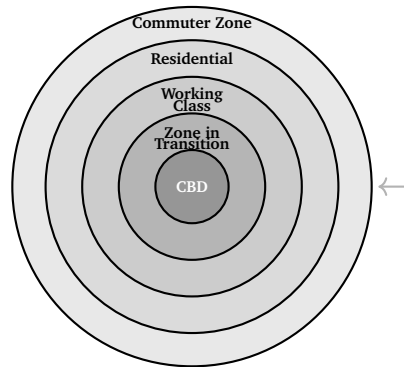
Q1. As per the Government of India's **Pradhan Mantri Awas Yojana – Urban (PMAY-U)** framework, which of the following correctly states the household annual income ceilings for the **EWS, LIG, MIG-I and MIG-II** beneficiary categories?

- (A) EWS ceiling is Rs. 1 lakh per annum; LIG ceiling is Rs. 3 lakh per annum; MIG-I ceiling is Rs. 6 lakh per annum; MIG-II ceiling is Rs. 12 lakh per annum.
- (B) EWS ceiling is Rs. 2 lakh per annum; LIG ceiling is Rs. 5 lakh per annum; MIG-I ceiling is Rs. 10 lakh per annum; MIG-II ceiling is Rs. 15 lakh per annum.
- (C) EWS includes all households below the urban poverty line irrespective of income; no specific monetary cut-off is prescribed under PMAY-U.



- (D) EWS ceiling is Rs. 3 lakh per annum; LIG ceiling is Rs. 6 lakh per annum; MIG-I covers Rs. 6–12 lakh and MIG-II covers Rs. 12–18 lakh per annum.

Q2. The diagram below depicts a classical urban internal structure model. Identify the **model** and its **key limitation** as a descriptor of modern polycentric cities.



Concentric Zone Model (Burgess, 1925)

- (A) Hoyt's Sector Model — it assumes land uses radiate in wedge-shaped sectors along transport corridors, failing to account for any concentric zonal transitions.
- (B) Harris and Ullman's Multiple Nuclei Model — it proposes multiple activity centres of equal intensity, incorrectly assuming symmetrical growth around each nucleus.
- (C) Burgess's Concentric Zone Model — it assumes a single dominant CBD and uniform radial growth on a featureless plain, failing to reflect the multiple activity nodes and polycentric structure of modern cities.
- (D) Von Thünen's Isolated State Model — it describes agricultural land use rings around a rural market town and does not apply to internal urban structure at all.



Q3. Under the **Jawaharlal Nehru National Urban Renewal Mission (Jn-NURM)**, launched in 2005, cities were required to prepare a mandatory document as a **prerequisite for accessing central government funds**. This document assessed existing infrastructure gaps and outlined a 20-year investment roadmap aligned with urban reforms. It was called the:

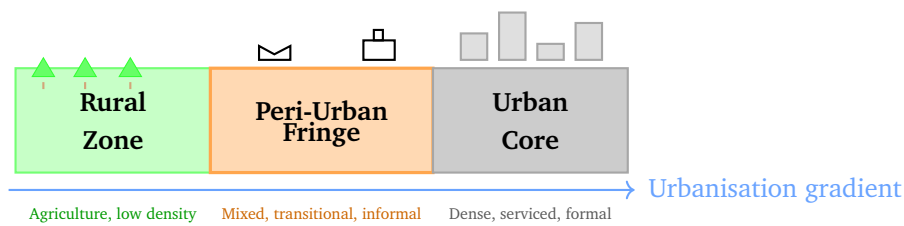
- (A) City Development Plan (CDP).
- (B) Master Plan (MP) / Development Plan (DP) prepared under the State Town and Country Planning Act.
- (C) District Development Programme (DDP) prepared jointly by the district and city authority.
- (D) City Sanitation Plan (CSP) as mandated by the National Urban Sanitation Policy.

Q4. The **Constitution (74th Amendment) Act, 1992** is a landmark legislation for urban self-governance in India. Which of the following statements about its provisions is **CORRECT**?

- (A) It made it mandatory for all Urban Local Bodies to adopt a uniform national building bylaws code by the year 1997 as a condition for state financial transfers.
- (B) It added the **Twelfth Schedule** to the Constitution, listing 18 functional items that may be transferred to municipalities, including urban planning, regulation of land use, public health, and slum improvement.
- (C) It abolished the distinction between development authorities and municipal corporations, merging all urban agencies into a single Urban Development Board in each state.
- (D) It mandated the immediate formation of Metropolitan Planning Committees (MPCs) in all cities with a population above 5 lakh and made their plans legally binding on all municipalities within the metropolitan area.



Q5. The diagram below illustrates the **rural–urban continuum** along a transect. The highlighted central zone represents the **peri-urban fringe**. Which of the following **BEST** characterises this zone?



- (A) A clearly demarcated zone with full municipal infrastructure, exclusively composed of planned residential land use and well-defined legal boundaries.
- (B) A predominantly agricultural zone with no urban land uses, characterised by large farm operations and minimal population or development pressure.
- (C) A zone of exclusively industrial land use, deliberately zoned by planning authorities to act as a buffer between agricultural and urban residential areas.
- (D) A transitional zone characterised by mixed land uses (agriculture, informal residential, small industry), fragmented land ownership, rapid land use change, inadequate infrastructure provision, and ambiguous administrative jurisdiction straddling multiple local bodies.

Q6. In **Complete Streets** design and walkability assessment, the **Pedestrian Level of Service (PLOS)** rating measures the quality of the walking experience along a street segment. Which of the following is the **primary composite set of factors** that standard PLOS methodologies evaluate?

- (A) The ratio of residential to commercial floor area on adjoining plots, since higher commercial density is always the primary and sole driver of pedestrian comfort ratings.
- (B) A composite of sidewalk width and continuity, pedestrian volume, separation from vehicular traffic (buffer or verge width), pavement surface quality, and presence of shade/street furniture.

- (C) Vehicular traffic volume alone, since pedestrian comfort is exclusively determined by the number of vehicles using the adjacent carriageway.
- (D) The number of signalised intersections per kilometre, which is the sole indicator of pedestrian crossing safety and walkway continuity.

Q7. As per the **Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines** (revised 2015), which of the following correctly states the population norm for provision of a **primary school** at the neighbourhood level?

- (A) 1 primary school per 10,000 population, with a recommended service radius of 1.5 km.
- (B) 1 primary school per 2,500 population, with a recommended service radius of 0.25 km.
- (C) 1 primary school per 5,000 population, with a recommended service radius of 0.5 km.
- (D) 1 primary school per 15,000 population, with a recommended service radius of 2.0 km.

Q8. **Urban agriculture** is increasingly recognised as a multifunctional land use tool in city planning. Which of the following **BEST** describes the **planning rationale** for formally integrating urban agriculture into master plans and neighbourhood designs?

- (A) Urban agriculture improves food security and dietary access for low-income urban residents, reduces the urban heat island effect through green cover, supports ecological connectivity, and provides livelihood opportunities — making it a productive, resilient, and multi-benefit land use category in sustainable planning frameworks.
- (B) Urban agriculture is only viable as a temporary land use on land reserved for future construction and must be removed once a master plan is formally adopted; it has no lasting role in permanent land use planning.
- (C) Urban agriculture is restricted to rural-urban fringe areas by Indian state planning acts because it introduces agricultural activity incompatible with urban zoning regulations in built-up areas.



(D) Urban agriculture has no proven nutritional impact on urban populations since city-grown produce cannot supply caloric volumes at scale; its only recognised value is as aesthetic greening of vacant derelict plots.

Q9. Mixed-income housing developments intentionally integrate dwelling units across multiple income brackets within a single project or neighbourhood. What is the **primary planning rationale** for this model over single-income homogeneous housing projects?

- (A) Mixed-income housing reduces construction costs significantly because low-income units can be built to lower structural specifications and are cross-subsidised by the sale premium earned on high-income units in the same structure.
- (B) Mixed-income housing is mandated by the Indian Constitution, which requires a minimum of 20% affordable units in every urban residential development across all states as a fundamental right to shelter.
- (C) Mixed-income housing maximises private developer profit by allowing the sale of premium units to directly cross-subsidise the affordable component, making projects financially viable without any government subsidy or intervention.
- (D) Mixed-income housing fosters social cohesion, reduces spatial income segregation, enables cross-subsidisation of affordable units by market-rate units, improves service delivery to low-income residents through shared infrastructure, and reduces the concentration of disadvantage in single-income areas.

Q10. As per the Noise Pollution (Regulation and Control) Rules, 2000 under the Environment (Protection) Act, 1986, which of the following correctly matches each **land use zone** to its prescribed **daytime ambient noise limit**?

- (A) Industrial Area: 45 dB(A); Residential Area: 55 dB(A); Commercial Area: 65 dB(A); Silence Zone: 75 dB(A).
- (B) Industrial Area: 75 dB(A); Commercial Area: 65 dB(A); Residential Area: 55 dB(A); Silence Zone: 50 dB(A).



- (C) Industrial Area: 60 dB(A); Commercial Area: 50 dB(A); Residential Area: 45 dB(A); Silence Zone: 40 dB(A).
- (D) Silence Zone: 75 dB(A); Residential Area: 65 dB(A); Commercial Area: 55 dB(A); Industrial Area: 45 dB(A).



Detailed Solutions

Sol. 1.

Solution

Difficulty: Beginner • Chapter: Housing Policy and Affordability

Quick Solution: PMAY-U defines EWS as households earning up to Rs. 3 lakh per annum, LIG up to Rs. 6 lakh, MIG-I up to Rs. 12 lakh, and MIG-II up to Rs. 18 lakh. **Answer: (D).**

Concept — Income Categories in Affordable Housing (PMAY-U): The Government of India's Pradhan Mantri Awas Yojana – Urban (PMAY-U) and related Ministry of Housing and Urban Affairs (MoHUA) guidelines classify beneficiary households into four income groups for the purpose of targeting housing subsidies under the Credit Linked Subsidy Scheme (CLSS) and other components:

Category	Household Annual Income	Max. Carpet Area
EWS (Economically Weaker Section)	Up to Rs. 3 lakh	30 m ²
LIG (Lower Income Group)	Rs. 3–6 lakh	60 m ²
MIG-I (Middle Income Group-I)	Rs. 6–12 lakh	160 m ²
MIG-II (Middle Income Group-II)	Rs. 12–18 lakh	200 m ²

These thresholds are critical for identifying target beneficiaries, designing dwelling unit sizes, and calibrating interest subsidy levels under the Credit Linked Subsidy Scheme. EWS and LIG households are eligible for a higher interest subsidy rate compared to MIG categories. The carpet area caps ensure that public subsidy is directed only towards dwelling units of socially appropriate size.

Analysis of each option:

- **(A) EWS Rs. 1 lakh; LIG Rs. 3 lakh; MIG-I Rs. 6 lakh; MIG-II Rs. 12 lakh:** Incorrect. All thresholds are understated by a factor. The actual EWS ceiling is Rs. 3 lakh, not Rs. 1 lakh. This option simply shifts the correct values down by one tier — a common exam distractor.
- **(B) EWS Rs. 2 lakh; LIG Rs. 5 lakh; MIG-I Rs. 10 lakh; MIG-II Rs. 15 lakh:** Incorrect. These are fabricated figures that do not correspond to any notified government scheme. No official policy document prescribes Rs. 2 lakh as an EWS ceiling.



- (C) EWS includes all households below the urban poverty line; no income cut-off defined: Incorrect. PMAY-U explicitly defines income cut-offs in rupees per annum. The urban poverty line is a separate measure (computed by the Planning Commission/Niti Aayog) and does not directly define PMAY-U eligibility categories.
- (D) EWS Rs. 3 lakh; LIG Rs. 6 lakh; MIG-I Rs. 6–12 lakh; MIG-II Rs. 12–18 lakh: Correct. These are the officially notified income brackets under PMAY-U as per MoHUA guidelines.

Final Answer: PMAY-U income brackets: EWS Rs. 3L | LIG Rs. 6L | MIG-I Rs. 12L | MIG-II Rs. 18L ⇒ **D**

Answer: (D) [Go Back to Q1](#)

Sol. 2.

Solution

Difficulty: Intermediate • Chapter: Urban Structure and Land Use Theories

Quick Solution: The concentric ring diagram is Burgess's (1925) model; its key limitation is the assumption of a single dominant CBD on a featureless plain, which cannot explain polycentric urban structures. **Answer: (C).**

Concept — Classical Urban Structure Models: Three major theoretical models describe the internal spatial structure of cities:

- Burgess's Concentric Zone Model (1925):** Based on Chicago, this model proposes five concentric rings expanding outward from a single CBD: (i) CBD; (ii) Zone in Transition (mixed residential/industrial); (iii) Working Class Zone; (iv) Residential Zone (middle class); (v) Commuter Zone. Growth is assumed uniform in all directions on a flat, featureless plain with a single dominant business centre.
- Hoyt's Sector Model (1939):** Proposes that land uses radiate outward from the CBD in wedge-shaped sectors along major transport routes. High-rent residential areas extend along the most attractive corridors; industrial zones follow railway lines. The model acknowledges transport influence but retains the single-centre assumption.
- Harris and Ullman's Multiple Nuclei Model (1945):** Recognises that large cities develop around several distinct activity nuclei (ports, industrial districts, universities, shopping centres) rather than a single CBD. This better explains polycentric metropolitan structures.



The diagram in the question shows five concentric rings — the unmistakable signature of Burgess's Concentric Zone Model. Its central weakness in the context of modern cities is that it posits a single all-dominant CBD, whereas contemporary metropolitan areas (Mumbai, Delhi, Bengaluru) have multiple competing sub-centres, edge cities, and corridors of activity.

Analysis of each option:

- **(A) Hoyt's Sector Model:** Incorrect. Hoyt's model produces a radial wedge/sector pattern emanating from the CBD, not concentric rings. The diagram clearly shows equidistant concentric circles — characteristic of Burgess, not Hoyt.
- **(B) Harris and Ullman's Multiple Nuclei Model:** Incorrect. The Multiple Nuclei Model shows a mosaic of irregularly shaped land use patches around several dispersed nuclei; it does not produce any concentric ring structure at all.
- **(C) Burgess's Concentric Zone Model – single CBD assumption on featureless plain:** Correct. The five concentric rings identify this as Burgess. The stated limitation — inability to explain polycentric, multi-nucleated modern cities — is the model's canonical weakness acknowledged in the literature.
- **(D) Von Thünen's Isolated State Model:** Incorrect. Von Thünen's model (1826) also produces concentric rings, but around a *rural* market town to describe agricultural land use intensity, not the internal socio-economic zones of a city. The two models are often confused but apply to entirely different scales and phenomena.

Final Answer: Concentric rings → Burgess (1925); single CBD assumption fails for polycentric cities ⇒

Answer: (C) [Go Back to Q2](#)



Sol. 3.

Solution

Difficulty: Beginner • Chapter: Urban Development Schemes (Government of India)

Quick Solution: JnNURM mandated each city to prepare a City Development Plan (CDP) as a prerequisite for central funding. **Answer: (A).**

Concept — Jawaharlal Nehru National Urban Renewal Mission (JnNURM), 2005: JnNURM was a flagship urban development programme launched in December 2005 by the Government of India, covering 63 Mission Cities (7 Mega Cities + 28 Million-Plus Cities + 28 Other Cities) under two sub-missions: Urban Infrastructure and Governance (UIG) and Basic Services to the Urban Poor (BSUP). A distinguishing feature of JnNURM was its **reform conditionality** — cities had to commit to and implement a set of mandatory urban governance reforms (e-governance, property tax reform, ring-fencing of urban services, user charges, community participation law) as a condition for accessing central assistance.

The **City Development Plan (CDP)** was the cornerstone planning document:

- **Purpose:** Assessed baseline infrastructure deficits, projected future demand, identified investment priorities, and outlined a 20-year capital investment programme.
- **Preparation:** Prepared through a participatory process involving citizens, elected representatives, ULB officials, and technical experts, often facilitated by HPEC/consultants.
- **Mandatory prerequisite:** No city could access JnNURM funds without a formally approved CDP and a signed Memorandum of Agreement (MoA) committing to reforms.

The CDP was not the same as a statutory Master Plan — it was a strategic, investment-oriented document focused on identifying and financing infrastructure gaps rather than regulating land use.

Analysis of each option:

- **(A) City Development Plan (CDP):** Correct. The CDP was the specific mandatory prerequisite document for JnNURM funding, distinct from the statutory Development Plan and not previously required under any other programme.
- **(B) Master Plan / Development Plan (DP) under State TCPA:** Incorrect. Statutory Master Plans/DPs were a pre-existing legal requirement under State Acts, unrelated to JnNURM conditionalities. JnNURM did



not introduce or require the preparation of statutory DPs as its funding prerequisite.

- **(C) District Development Programme (DDP):** Incorrect. No such document is prescribed under JnNURM. DDPs are associated with rural development programmes such as the Backward Regions Grant Fund, not with urban renewal missions.
- **(D) City Sanitation Plan (CSP):** Incorrect. City Sanitation Plans were required under the National Urban Sanitation Policy (NUSP, 2008), which was a separate initiative. While related to JnNURM's sanitation goals, the CSP was not the primary funding prerequisite document for JnNURM's infrastructure sub-missions.

Final Answer: JnNURM mandatory funding prerequisite = City Development Plan (CDP) ⇒ A

Answer: (A) [Go Back to Q3](#)

Sol. 4.

Solution

Difficulty: Intermediate • Chapter: Urban Governance and Planning Legislation

Quick Solution: The 74th Amendment added the Twelfth Schedule with 18 functions devolvable to municipalities, including urban planning and land use regulation. **Answer: (B).**

Concept — Constitution (74th Amendment) Act, 1992: The 74th Constitutional Amendment (effective 1 June 1993) was enacted to strengthen urban local self-governance by constitutionally recognising Urban Local Bodies (ULBs). Its principal provisions include:

- **Part IXA** inserted into the Constitution (Articles 243P to 243ZG): Constitutional recognition of municipalities (Nagar Panchayats, Municipal Councils, Municipal Corporations) based on population thresholds.
- **Twelfth Schedule** (Article 243W): Lists **18 functions** that States *may* devolve to municipalities. These include: (1) Urban planning including town planning; (2) Regulation of land use and construction of buildings; (3) Planning for economic and social development; (4) Roads and bridges; (5) Water supply; (6) Public health, sanitation, conservancy and solid waste management; (7) Fire services; (8) Urban forestry; (9) Protection of the environment; (10) Safeguarding the interests of weaker sections; (11) Slum improvement and upgradation; (12) Urban poverty al-



leviation; (13) Public amenities; (14) Regulation of slaughterhouses and tanneries; and others.

- **Ward Committees** for cities with population exceeding 3 lakh.
- **State Finance Commissions (SFCs)** to review municipal finances every 5 years.
- **Metropolitan Planning Committees (MPCs)** for metropolitan areas with population above 10 lakh (not 5 lakh as stated in option D).

The critical point is that devolution of the 18 Schedule XII functions is *discretionary* for states — the 74th Amendment authorises but does not mandate transfer. This is a frequently tested distinction.

Analysis of each option:

- **(A) Mandatory uniform national building bylaws by 1997:** Incorrect. The 74th Amendment contains no such provision. Uniform building by-laws (the Model Building Bye-Laws, MBBL) were developed by the Ministry of Housing as a separate advisory document and are not a constitutional mandate linked to the 74th Amendment.
- **(B) Twelfth Schedule with 18 functions devolvable to municipalities:** Correct. The Twelfth Schedule is precisely the constitutional instrument introduced by the 74th Amendment to list the 18 functions that states may transfer to ULBs.
- **(C) Abolished distinction between development authorities and municipal corporations:** Incorrect. The 74th Amendment does not abolish or merge urban agencies. Many state governments retain separate development authorities (like MMRDA, BDA, HUDA) alongside municipal corporations; this was a deliberate political choice left to states.
- **(D) Mandatory MPCs in all cities with population above 5 lakh:** Incorrect on both counts. Article 243ZE provides for MPCs in metropolitan areas with population above **10 lakh** (not 5 lakh), and even this provision has been implemented by very few states — it is permissive, not immediately mandatory.

Final Answer: 74th Amendment → Twelfth Schedule with 18 devolvable municipal functions ⇒ B

Answer: (B) [Go Back to Q4](#)



Sol. 5.

Solution

Difficulty: Intermediate • Chapter: Settlement Geography and Urban Fringe

Quick Solution: The peri-urban fringe is a transitional zone of mixed land uses, rapid land use change, fragmented ownership, infrastructure deficit, and ambiguous governance jurisdiction. **Answer: (D).**

Concept — Rural–Urban Continuum and Peri-Urban Fringe: The **rural–urban continuum** recognises that the transition from purely rural to purely urban character is gradual and spatially graduated rather than a hard-edged binary boundary. Along this continuum, three broad zones are distinguished:

- (a) **Rural hinterland:** Primarily agricultural land uses, low population density, traditional settlement patterns, and governance under Gram Panchayats. Limited urban services but stable land use.
- (b) **Peri-urban fringe (urban-rural fringe):** The transitional, dynamically changing zone where urban expansion meets the rural hinterland. Characteristics include:
 - *Mixed land uses:* Agriculture, informal residential layouts, industries (often polluting or land-extensive), logistics, solid waste processing, brick kilns, weekend farmhouses, and unauthorised colonies coexist.
 - *Rapid land use change:* Agricultural land is quickly converted to non-agricultural uses as urban land prices rise, often through informal or semi-legal transactions.
 - *Fragmented land ownership:* Multiple small landholdings, ancestral titles, and disputed boundaries complicate planned development.
 - *Infrastructure deficit:* Piped water, sewerage, solid waste collection, paved roads, and public transport coverage are typically incomplete or absent.
 - *Governance ambiguity:* Often administered by Gram Panchayats (under District Collector / rural administration) despite urban-scale population and development pressures; sometimes in the planning jurisdiction of development authorities but not within the ULB limits — creating a regulatory and fiscal vacuum.
- (c) **Urban core:** Dense, predominantly formal development served by municipal infrastructure, clearly within ULB jurisdiction, with higher floor space indices and mixed formal commerce and residences.

Analysis of each option:



- **(A) Clearly demarcated, fully serviced, exclusively residential:** Incorrect. The peri-urban fringe is characterised precisely by the *absence* of clear demarcation, incomplete infrastructure, and a diversity of land uses — the opposite of this description.
- **(B) Exclusively agricultural, large farms, no development pressure:** Incorrect. This describes the stable rural hinterland farther from the city. The peri-urban fringe is actively under conversion pressure and already contains non-agricultural uses.
- **(C) Exclusively industrial, deliberately zoned as a buffer:** Incorrect. While industrial uses are found in peri-urban zones (often informally), the zone is not exclusively industrial nor is it a deliberately planned buffer — it is an organic, unplanned transitional outcome of urbanisation pressures.
- **(D) Mixed land uses, fragmented ownership, rapid change, infrastructure deficit, ambiguous jurisdiction:** Correct. This is a comprehensive and accurate characterisation of the peri-urban fringe as defined in academic literature and Indian planning practice.

Final Answer: Peri-urban fringe = transitional zone: mixed uses, rapid land change, infrastructure gap, governance ambiguity ⇒ **D**

Answer: (D) [Go Back to Q5](#)

Sol. 6.

Solution

Difficulty: Intermediate • Chapter: Transportation Planning and Walkability

Quick Solution: PLOS is a composite rating of sidewalk width, pedestrian volume, buffer from traffic, surface quality, and amenities — not any single factor alone. **Answer: (B).**

Concept — Complete Streets and Pedestrian Level of Service (PLOS): **Complete Streets** is a design philosophy (and increasingly a policy mandate) that requires streets to be planned, designed, built, and maintained to serve all users — pedestrians, cyclists, transit riders, and motorists — across all ages and abilities. A key metric in Complete Streets assessment is the **Pedestrian Level of Service (PLOS)**, which rates the quality of the walking environment on a street segment, typically on a scale from LOS A (excellent, free-flowing, comfortable) to LOS F (very poor, hazardous, uncomfortable).

Standard PLOS methodologies (such as those in the HCM – Highway Capacity



Manual, CROW guidelines, or India-specific adapted frameworks) evaluate the following composite factors:

- **Sidewalk width and continuity:** Effective walkway width after accounting for obstructions (poles, trees, kiosks); gaps or discontinuities in the footpath network.
- **Pedestrian volume / conflict:** Number of pedestrians per unit time per unit width; higher pedestrian density reduces PLOS.
- **Buffer / separation from vehicular traffic:** Width of the verge, street furniture zone, or landscaped strip between the footpath and the travel lanes. Physical separation significantly reduces perceived and actual pedestrian risk.
- **Surface quality:** Pavement condition (cracking, uneven surfaces, trip hazards) and slip resistance.
- **Environmental comfort:** Shade from street trees or building canopies, presence of street furniture (benches, lighting), and enclosure created by building facades.
- **Crossing facilities:** Availability and spacing of pedestrian crossings, crossing signal timing, and waiting conditions.

No single factor determines PLOS in isolation — it is by definition a composite, multi-criteria assessment.

Analysis of each option:

- **(A) Residential-to-commercial floor area ratio as sole driver:** Incorrect. While land use mix affects pedestrian generation and street activation, it is not what PLOS directly measures. PLOS assesses the physical quality and comfort of the walking environment, not the building use mix on adjacent plots.
- **(B) Composite of sidewalk width, volume, buffer, surface quality, shade/furniture:** Correct. This accurately describes the multi-factor composite nature of PLOS assessment as described in standard transportation and urban design manuals.
- **(C) Vehicular traffic volume alone:** Incorrect. While high vehicular traffic volume negatively affects PLOS (through noise, pollution, and perceived danger), PLOS considers the entire walking environment experience — a busy street with wide, buffered, tree-shaded, well-surfaced footpaths can still achieve a high PLOS rating.
- **(D) Number of signalised intersections per kilometre as sole indicator:** Incorrect. Crossing facilities and signal density are components



of pedestrian network connectivity assessments, not the primary determinants of PLOS for a street segment. Many PLOS frameworks assess mid-block walking quality independent of intersection density.

Final Answer: PLOS = composite of sidewalk width + buffer + surface + volume + shade $\Rightarrow$ **B**

Answer: (B) [Go Back to Q6](#)

Sol. 7.

Solution

Difficulty: Beginner • Chapter: Planning Standards and Urban Services

Quick Solution: URDPFI Guidelines prescribe 1 primary school per 5,000 population with a 0.5 km service radius at the neighbourhood level. **Answer: (C).**

Concept — URDPFI Guidelines: Educational Facility Norms: The **Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines** (published by the Ministry of Urban Development, Government of India; revised in 2015) provide detailed normative standards for social and physical infrastructure in urban areas. These are the primary reference for planning standards in Indian planning practice and entrance examinations.

For **educational facilities**, the URDPFI Guidelines prescribe a hierarchical provision based on population and service radius:

Facility	Population Norm	Service Radius	Hierarchy Level
Balwadi / Creche	1 per 1,500	0.15 km	Sub-neighbourhood
Primary School (I–VIII)	1 per 5,000	0.5 km	Neighbourhood
Senior Secondary School	1 per 7,500–10,000	1.0 km	Sub-district
College	1 per 1,00,000	3.0–5.0 km	City level

The **1 per 5,000 / 0.5 km** norm for primary schools is widely cited in exams. The 0.5 km service radius is designed to ensure that children can walk to school safely without crossing major arterial roads — a fundamental access equity principle in neighbourhood planning.

Analysis of each option:



- **(A) 1 per 10,000 population, 1.5 km radius:** Incorrect. A population norm of 10,000 and a 1.5 km service radius are more appropriate for a higher-order educational facility (senior secondary school or intermediate college level), not a primary school.
- **(B) 1 per 2,500 population, 0.25 km radius:** Incorrect. This is an over-provision relative to standard norms and more akin to a pre-primary or balwadi facility level. Providing one primary school per 2,500 population would result in schools that are too small to be economically viable.
- **(C) 1 per 5,000 population, 0.5 km radius:** Correct. This is the standard URDPFI norm for a primary school at the neighbourhood level — the benchmark used across Indian planning practice and competitive exams.
- **(D) 1 per 15,000 population, 2.0 km radius:** Incorrect. A 2 km radius for primary school access is far beyond safe, independent walking distance for children (typically capped at 0.5–0.8 km in international standards). This norm would leave many residential areas severely under-served.

Final Answer: URDPFI norm for primary school = 1 per 5,000 population; 0.5 km service radius $\Rightarrow$

Answer: (C) [Go Back to Q7](#)

Sol. 8.

Solution

Difficulty: Intermediate • Chapter: Sustainable Urban Planning and Food Security

Quick Solution: Urban agriculture offers multi-dimensional benefits — food security, urban heat island mitigation, ecological connectivity, and livelihoods — making it a valid and increasingly formal land use in sustainable city planning. **Answer: (A).**

Concept — Urban Agriculture in City Planning: Urban agriculture (UA) encompasses the cultivation of food (crops, vegetables, fruits), rearing of small livestock, aquaculture, and apiculture within or on the periphery of towns and cities. Contemporary planning frameworks increasingly recognise UA not merely as a residual or informal land use but as a deliberate, multifunctional urban planning strategy with the following benefits:

- **Food security and nutrition:** UA improves dietary diversity and affordable access to fresh produce for low-income urban households, reducing dependence on distant supply chains that are vulnerable to price shocks



and transport disruptions.

- **Urban climate mitigation:** Green agricultural cover reduces impervious surfaces, increases evapotranspiration, provides shade, and mitigates the urban heat island (UHI) effect by cooling the microclimate.
- **Ecological connectivity:** UA sites, community gardens, and allotment areas function as green infrastructure nodes that support urban biodiversity and connect fragmented habitat patches.
- **Livelihood and social cohesion:** Community gardens and urban farms provide part-time or full-time income to urban poor households, and foster community interaction and social capital.
- **Waste and water management:** Composting of organic municipal waste and greywater recycling for irrigation convert urban waste streams into productive agricultural inputs.

In Indian planning practice, UA is beginning to be incorporated in Master Plans (notably in several cities under AMRUT and Smart Cities Mission green infrastructure provisions) and is explicitly recognised in the National Urban Housing and Habitat Policy. Globally, cities such as Havana, Singapore, Detroit, and Bogotá have institutionalised UA as a core planning component.

Analysis of each option:

- **(A) Multi-benefit: food security + heat island mitigation + ecology + livelihoods:** Correct. This accurately captures the multifunctional rationale for integrating UA into formal planning frameworks.
- **(B) Only viable as temporary land use on future construction land; no permanent role:** Incorrect. While UA does sometimes occupy land reserved for future development on an interim basis, its value is increasingly recognised as *permanent* urban green infrastructure. Many cities worldwide formally zone land for community gardens and allotments.
- **(C) Restricted to peri-urban fringe by all Indian state planning acts:** Incorrect. No such blanket restriction exists. Many Indian cities permit rooftop farming, community gardens, and kitchen gardens within residential zones, and several states are actively promoting UA within urban boundaries.
- **(D) No proven nutritional impact; only aesthetic value:** Incorrect. Research evidence from Indian cities and globally consistently demonstrates measurable improvements in dietary diversity, household food expenditure savings, and nutritional outcomes from urban farming among participating low-income communities.

Final Answer: Urban agriculture = multi-benefit planning tool for food secu-



city, ecology, livelihoods, and climate resilience ⇒ A

Answer: (A) [Go Back to Q8](#)

Sol. 9.

Solution

Difficulty: Intermediate • Chapter: Housing Policy and Social Integration

Quick Solution: Mixed-income housing's primary planning rationale is social integration, poverty de-concentration, cross-subsidisation, and shared infrastructure delivery — not merely profit or construction savings. **Answer: (D).**

Concept — Mixed-Income Housing: Rationale and Principles: Mixed-income housing (MIH) is a deliberate planning and housing policy strategy that co-locates dwelling units targeting different income levels within a single development, block, or neighbourhood. It emerged as a response to the well-documented failures of large-scale, monolithic public housing estates (such as the Pruitt-Igoe towers in St. Louis or chawl/slum resettlement colonies in India) which concentrated poverty, deprivation, and social dysfunction in spatially isolated zones.

The **primary planning rationale** for mixed-income housing encompasses several reinforcing objectives:

- (a) **Social cohesion and integration:** By placing low-income, middle-income, and higher-income households in proximity, MIH aims to reduce income-based residential segregation, foster inter-class social interaction, and build neighbourhood social capital.
- (b) **De-concentration of poverty:** Dispersing affordable units across multiple mixed developments prevents the spatial concentration of deprivation, criminality, and poor educational and health outcomes associated with single-income low-income estates.
- (c) **Cross-subsidisation:** Revenue from market-rate and above-market units within the same project (or through Transferable Development Rights) finances the construction of below-cost affordable units, reducing or eliminating the need for direct government capital subsidy.
- (d) **Infrastructure and services quality:** Low-income residents in mixed developments typically benefit from higher standards of infrastructure, maintenance, and public service provision than they would receive in isolated affordable housing estates — because wealthier co-residents exercise greater consumer and political pressure on service providers.



- (e) **Inclusionary zoning:** Many countries and Indian states (e.g., the Affordable Housing Policy of Maharashtra requiring 20% EWS/LIG units in large developments) now mandate MIH components in private developments through inclusionary zoning regulations.

Analysis of each option:

- **(A) Construction cost reduction through lower specs for low-income units:** Incorrect. While affordable units may have smaller carpet areas, planning regulations generally do not permit lower structural specifications that would compromise structural safety. Moreover, this is an incidental financial aspect, not the *primary planning rationale* for MIH. The planning literature consistently foregrounds the social and governance rationale.
- **(B) Constitutionally mandated minimum 20% affordable units across all states:** Incorrect. No provision in the Constitution mandates a specific affordable housing percentage for all developments. Inclusionary zoning rules vary by state and are implemented through planning regulations, not constitutional mandate.
- **(C) Maximises private developer profit as primary rationale:** Incorrect. While the cross-subsidy mechanism is intended to make MIH financially viable for private developers, characterising profit maximisation as the *primary planning rationale* conflates a financial mechanism with the social objective. Planning theory and policy documents consistently foreground social integration as the primary goal.
- **(D) Social cohesion + poverty de-concentration + cross-subsidisation + shared infrastructure + reduced spatial disadvantage:** Correct. This comprehensively and accurately captures the primary multi-dimensional planning rationale for mixed-income housing as articulated in housing policy literature and national housing programmes.

Final Answer: MIH rationale = social integration + de-concentration of poverty + cross-subsidy + shared service delivery ⇒ D

Answer: (D) [Go Back to Q9](#)



Sol. 10.

Solution

Difficulty: Beginner • Chapter: Environmental Planning Standards

Quick Solution: The Noise Pollution Rules 2000 prescribe: Industrial 75 dB(A), Commercial 65 dB(A), Residential 55 dB(A), Silence Zone 50 dB(A) for day-time. **Answer: (B).**

Concept — Ambient Noise Standards under Noise Pollution (Regulation and Control) Rules, 2000: The Noise Pollution (Regulation and Control) Rules, 2000, notified under the Environment (Protection) Act, 1986, prescribe permissible ambient noise levels for different land use zones. These standards govern noise from all sources (industrial, commercial, residential, and traffic) within the respective zones:

Area / Zone	Day-time Limit	Night-time Limit
Industrial Area	75 dB(A)	70 dB(A)
Commercial Area	65 dB(A)	55 dB(A)
Residential Area	55 dB(A)	45 dB(A)
Silence Zone*	50 dB(A)	40 dB(A)

**Silence Zones include areas within 100 metres of schools, courts, hospitals, and places of worship.*

Day-time = 06:00 to 22:00 hrs; Night-time = 22:00 to 06:00 hrs.

These standards are used in urban planning for **land use buffer zone** design: industrial areas must be separated from noise-sensitive uses (residential, silence zones) by adequate buffer widths — typically green belts, transport corridors, or intervening commercial uses — to ensure that ambient levels at the sensitive receptor location do not exceed the applicable zone standard.

Analysis of each option:

- **(A) Industrial 45, Residential 55, Commercial 65, Silence 75 dB(A):** Incorrect. This option inverts the logical order — it assigns the *lowest* limit to the noisiest zone (Industrial) and the *highest* to Silence Zones. This is the exact opposite of the notified standards, representing a common exam reversal distractor.
- **(B) Industrial 75, Commercial 65, Residential 55, Silence 50 dB(A):** Correct. These are the verbatim daytime limits in Schedule I of the Noise Pollution (Regulation and Control) Rules, 2000. The descending order



(Industrial > Commercial > Residential > Silence) is logical and consistent with expected land use noise intensity.

- **(C) Industrial 60, Commercial 50, Residential 45, Silence 40 dB(A):** Incorrect. These values are uniformly 15 dB lower than the notified standards. This option represents an approximate night-time scale offset, not the notified daytime limits.
- **(D) Silence 75, Residential 65, Commercial 55, Industrial 45 dB(A):** Incorrect. This option completely reverses the hierarchy — assigning the most permissive noise limit (75 dB) to the most noise-sensitive zone (Silence) and the most restrictive (45 dB) to the noisiest zone (Industrial), the opposite of what is intended and notified.

Final Answer: Day-time noise limits: Industrial 75 > Commercial 65 > Residential 55 > Silence 50 dB(A) ⇒ **B**

Answer: (B) [Go Back to Q10](#)

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	D	2	C	3	A	4	B	5	D
6	B	7	C	8	A	9	D	10	B

