

MAH M Arch CET Current Architecture Practice

Sample Paper – 6

Duration: 12 Minutes

Maximum Marks: 20

Instructions

- This paper contains **10 Multiple Choice Questions (MCQs)**.
- Each question carries **2 marks**. There is **no negative marking**.
- Only one option is correct for each question.
- Click on the question number to jump to its solution.

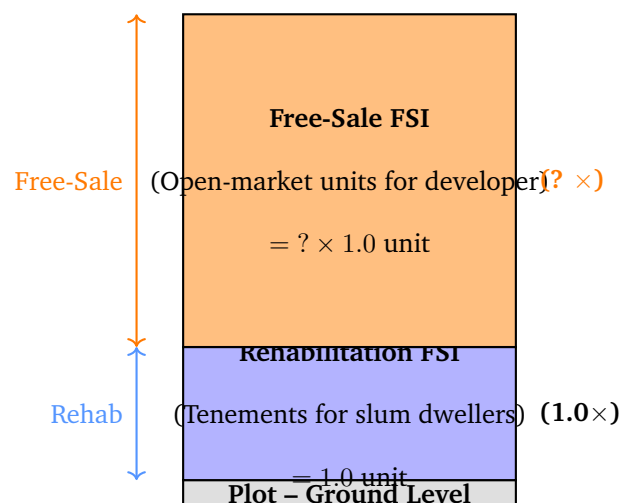
Section V – Current Architecture Practice

- Q1.** Under the general guidance provided in **NBC 2016 Part 2** (Administration), which of the following documents is **NOT** required to be submitted along with a building permit application?
- (A) A site plan drawn to a recognised scale showing plot boundaries, north direction, and surrounding roads
- (B) Structural drawings signed and certified by a licensed structural engineer
- (C) Income tax returns of the property owner for the preceding three assessment years
- (D) Proof of ownership or title documents establishing the applicant's legal right over the plot
- Q2.** As per **NBC 2016 Part 6** (Structural Design), which of the following is correctly classified as a **dead load** acting on a building?
- (A) Self-weight of the structural frame, walls, slabs, floors, and all permanently fixed installations
- (B) Wind pressure acting on the building envelope during a severe cyclonic storm
- (C) Live load arising from occupants, furniture, and moveable equipment on floor slabs



(D) Seismic inertia forces generated in the building mass during an earthquake event

Q3. Under **UDCPR 2020** Regulation 33(10) governing Slum Rehabilitation Authority (SRA) schemes in Mumbai, what is the **free-sale FSI component** that a developer is permitted to construct (over and above the rehabilitation FSI)? The diagram below illustrates the vertical stacking concept of rehabilitation and free-sale components on a plot.



- (A) 1.0 times the rehabilitation built-up area
- (B) 1.5 times the rehabilitation built-up area
- (C) 2.0 times the rehabilitation built-up area
- (D) 2.5 times the rehabilitation built-up area

Q4. Under the **Affordable Housing Scheme** provisions of **UDCPR 2020**, what additional **incentive FSI** (over and above the permissible base FSI) is allowed for a residential project in which **at least 20%** of the total built-up area is earmarked for EWS/LIG housing?

- (A) 0.10 additional FSI
- (B) 0.30 additional FSI
- (C) 0.50 additional FSI
- (D) 1.00 additional FSI



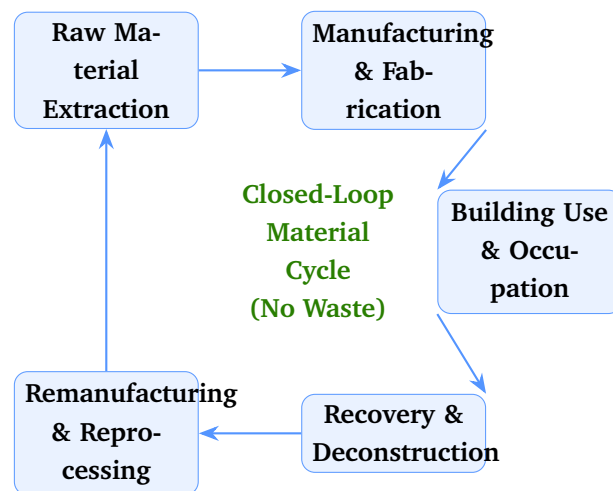
- Q5.** Under the **Maharashtra Regional and Town Planning (MRTP) Act, 1966**, which authority is primarily responsible for **preparing and implementing a Town Planning Scheme (TPS)**?
- (A) The Planning Authority (Municipal Corporation or Municipal Council)
 - (B) The State Government through the Urban Development Department
 - (C) The Town Planning Department at the Divisional Commissioner's level
 - (D) The District Collector of the concerned district
- Q6.** **Section 45** of the Maharashtra Regional and Town Planning (MRTP) Act, 1966 deals with which of the following aspects of development control?
- (A) Compulsory acquisition of land reserved for public purposes in the Development Plan
 - (B) Application by a landowner or developer for permission to carry out development
 - (C) Preparation and publication of the draft Development Plan by the Planning Authority
 - (D) Constitution, composition, and powers of the Planning Authority
- Q7.** Under the **Architects Act, 1972**, how many **electoral zones** are prescribed in its **First Schedule** for the purpose of electing architect members to the **Council of Architecture (CoA)**?
- (A) 3 electoral zones
 - (B) 4 electoral zones
 - (C) 5 electoral zones
 - (D) 6 electoral zones
- Q8.** The universally adopted "**Principles of Universal Design**", developed at the **Center for Universal Design, North Carolina State University**



(USA), recognises how many guiding principles for the inclusive design of environments, products, and communications?

- (A) 5 principles
- (B) 6 principles
- (C) 8 principles
- (D) 7 principles

Q9. Which of the following **best describes** the **cradle-to-cradle (C2C)** concept as applied to building design and material use? The diagram below illustrates the material flow cycle central to the C2C framework.



- (A) A strategy of designing buildings to stand for at least 100 years requiring zero maintenance or material replacement
- (B) A closed-loop material flow system where all materials are designed to cycle perpetually through biological or technical metabolisms, eliminating waste
- (C) A procurement rule requiring that at least 50% of all building materials be manufactured from post-consumer recycled content
- (D) A carbon-offsetting framework in which the embodied carbon of building materials is balanced by on-site renewable energy generation



Q10. The **Indian National Trust for Art and Cultural Heritage (INTACH)** classifies heritage structures listed under its **Heritage Listings** into how many **Grades (categories)**?

- (A) 3 Grades – Grade I, Grade II, and Grade III
- (B) 2 Grades – Grade I and Grade II only
- (C) 4 Grades – Grade I through Grade IV
- (D) 5 Grades – Grade I through Grade V



Solutions

Q1.

Solution

Concept: NBC 2016 Part 2 (Administration) prescribes the procedure and documentation required for building permit applications. Mandatory documents relate to the technical, legal, and locational aspects of the proposed building – they must enable the sanctioning authority to verify compliance with development regulations.

Step 1 – Documents that ARE required:

- (A) **Site/layout plan** – required to verify setbacks, road widths, access, and plot dimensions.
- (B) **Structural drawings** – required to ensure structural safety; must be signed by a licensed structural engineer.
- (D) **Ownership documents** – required to establish that the applicant has legal right to build on the plot (sale deed, property card, etc.).

Step 2 – Document NOT required: (C) **Income tax returns** of the property owner are a financial/fiscal record. They have no bearing on the technical or legal aspects of the building proposal. NBC 2016 does not mandate submission of an owner's income tax filings as part of the building sanction package.

Why other options are wrong:

- (A) Site plan – mandatory for plan scrutiny and setback verification.
- (B) Structural drawings – mandatory for structural safety certification.
- (D) Title/ownership documents – mandatory to confirm applicant's legal standing.

Final Answer: ☐ C – **Income tax returns** of the owner are *not* required under NBC 2016 building permit documentation.

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



Q2.

Solution

Concept: NBC 2016 Part 6 (Structural Design) classifies loads into: *dead loads*, *imposed (live) loads*, *wind loads*, *seismic loads*, and *special loads*. Each category has a distinct definition and method of calculation per the referenced IS codes.

Step 1 – Definition of Dead Load (IS 875 Part 1): A dead load is any *permanent, static* force whose magnitude and position remain constant throughout the service life of the structure. It includes the self-weight of:

- All structural elements (columns, beams, slabs, walls, foundations)
- Permanently fixed finishes (floor screeds, plastering, tiles)
- Built-in services permanently embedded in the structure

Step 2 – Classification of other options:

- Wind load (B) – lateral/dynamic environmental load (IS 875 Part 3)
- Live/imposed load (C) – variable load from occupancy and moveable items (IS 875 Part 2)
- Seismic force (D) – inertia-based dynamic load from ground acceleration (IS 1893)

Final Answer: – Self-weight of the structural frame and permanently fixed elements is the **dead load** per NBC 2016 Part 6.

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

Q3.

Solution

Concept: UDCPR 2020 Regulation 33(10) governs Slum Rehabilitation Authority (SRA) schemes in Mumbai. To make slum rehabilitation financially viable without government subsidy, the developer is offered an incentive in the form of *free-sale* built-up area that can be sold at market rates. The free-sale FSI directly subsidises the cost of constructing rehabilitation tenements.

Step 1 – Rehabilitation FSI: The developer must construct new tenements for all eligible slum dwellers (minimum carpet area per family as prescribed – 269 sq ft for Mumbai Island City, 300 sq ft for suburbs). The built-up area consumed for this purpose constitutes the *rehabilitation FSI* (= 1.0 unit in the diagram).

Step 2 – Free-Sale FSI under UDCPR 2020: For SRA schemes in Mumbai (sub-urban / MMR locations), UDCPR 2020 Regulation 33(10) permits the developer a



free-sale FSI equal to **2.5 times** the rehabilitation built-up area. This ratio enables cross-subsidisation: the revenue from selling 2.5 units of market-rate area funds the construction of 1 unit of rehabilitation tenements.

Why other options are wrong:

- (A) $1.0\times$ – insufficient incentive to attract private investment for large-scale rehabilitation.
- (B) $1.5\times$ – applicable to smaller or less complex rehabilitation projects outside Mumbai city limits.
- (C) $2.0\times$ – not the ratio prescribed for SRA projects under UDCPR 2020 in Mumbai.

Final Answer: D – The free-sale FSI permitted to the developer is **2.5 times** the rehabilitation built-up area under UDCPR 2020 Regulation 33(10).

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

Q4.

Solution

Concept: UDCPR 2020 incorporates Affordable Housing incentive provisions under its development control regulations to encourage private developers to include EWS (Economically Weaker Section) and LIG (Lower Income Group) units within market-rate residential projects, thereby expanding affordable housing stock without direct government spending.

Step 1 – Threshold Condition: When a developer earmarks a minimum of **20%** of the total proposed built-up area as EWS/LIG tenements (conforming to prescribed unit sizes, carpet area caps, and maximum sale price norms), UDCPR 2020 grants additional incentive FSI over the permissible base FSI.

Step 2 – Quantum of Incentive FSI: For projects meeting the 20% EWS/LIG threshold, the additional incentive FSI permitted under UDCPR 2020 is **0.30** (i.e., 30% added to the base FSI). Lower thresholds (e.g., 10%) earn a smaller incentive (0.10 FSI); higher thresholds (e.g., 30%) earn a larger incentive (0.50 FSI) in a graduated structure.

Why other options are wrong:

- (A) 0.10 FSI – corresponds to a lower EWS/LIG reservation threshold ($\leq 10\%$).
- (C) 0.50 FSI – corresponds to a higher EWS/LIG reservation threshold ($\geq 30\%$).



- (D) 1.00 FSI – no blanket 1.0 FSI bonus is prescribed merely for a 20% EWS/LIG commitment.

Final Answer: – An additional incentive FSI of **0.30** is allowed when at least 20% of BUA is earmarked for EWS/LIG housing under UDCPR 2020.

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

Q5.

Solution

Concept: The MRTP Act, 1966 establishes a three-tier planning hierarchy for Maharashtra: (i) Regional Plan – prepared by the Regional Planning Board; (ii) Development Plan – prepared by the Planning Authority; (iii) Town Planning Scheme (TPS) – prepared and implemented by the Planning Authority.

Step 1 – TPS under MRTP Act: Chapter VI of the MRTP Act (Sections 59–112) deals with Town Planning Schemes. A TPS is a detailed micro-level instrument for reconstituting and developing land in a planned manner. Sections 59–62 establish that the **Planning Authority** – the Municipal Corporation or Municipal Council for urban areas, or a Special Planning Authority for designated regions – is responsible for preparing, sanctioning, and implementing the TPS.

Step 2 – Role of other agencies: The State Government *approves* and sanctions the TPS after scrutiny, but does not prepare it. The Town Planning Department provides technical guidance and advice. The District Collector exercises no direct statutory function in TPS preparation under the MRTP Act.

Why other options are wrong:

- (B) State Government – approves/sanctions the TPS; does not prepare it.
- (C) Town Planning Department – provides technical support; not the statutory preparing authority.
- (D) District Collector – no role in TPS preparation under MRTP Act 1966.

Final Answer: – The **Planning Authority** (Municipal Corporation / Municipal Council) is responsible for preparing and implementing a Town Planning Scheme under the MRTP Act, 1966.

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



Q6.

Solution

Concept: Part III of the MRTP Act 1966 (Sections 43–58) covers the Development Control chapter. These sections form a logical sequence governing how development must be regulated in areas under a Development Plan.

Step 1 – Sequence of Development Control Sections:

- **Section 44** – Prohibition: No development to be carried out except with the permission of the Planning Authority.
- **Section 45** – *Application for permission*: Prescribes the procedure by which a landowner or developer must apply to the Planning Authority to obtain permission for development, and specifies what information/documents must accompany the application.
- **Section 46** – Decision: Power of the Planning Authority to grant, conditionally grant, or refuse the application.

Step 2 – Section 45 specifically: Section 45 is the operative provision enabling a person intending to develop land to formally apply for development permission. Without this application mechanism, Section 44's prohibition would be absolute with no route for lawful development.

Why other options are wrong:

- (A) Compulsory acquisition – covered under a separate chapter on land acquisition/reservation.
- (C) Preparation of draft Development Plan – covered under Chapter II (Sections 21–26).
- (D) Constitution of Planning Authority – covered under Chapter I/II of the MRTP Act.

Final Answer: – Section 45 of the MRTP Act deals with **application for permission to carry out development**.

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



Q7.

Solution

Concept: The Architects Act, 1972 establishes the Council of Architecture (CoA) as the statutory body for regulating the profession of architecture in India. To ensure geographic representation of registered architects from across the country, the Act's First Schedule divides India into electoral zones from which architect members are elected to the Council.

Step 1 – First Schedule – Five Electoral Zones:

- **Zone I (North):** J&K, Punjab, Himachal Pradesh, Delhi, Chandigarh UT, Haryana
- **Zone II (West):** Rajasthan, Gujarat, Goa, Maharashtra, Dadra & NH, Daman & Diu
- **Zone III (Central):** Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Uttarakhand, Bihar, Jharkhand
- **Zone IV (East):** West Bengal, Odisha, all North-East States, Andaman & Nicobar Islands, Sikkim
- **Zone V (South):** Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Kerala, Puducherry, Lakshadweep

Step 2 – Elected Seats: Each zone elects a fixed quota of architect members to the Council, ensuring balanced national representation irrespective of the density of registered architects in each zone.

Why other options are wrong:

- (A) 3 zones – too few to adequately cover India's geographic diversity under the Act.
- (B) 4 zones – the First Schedule specifically prescribes five, not four zones.
- (D) 6 zones – the statute does not prescribe six electoral zones; five is the correct count.

Final Answer: ☒ C – The Architects Act, 1972 prescribes **five (5) electoral zones** in its First Schedule for elections to the Council of Architecture.

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



Q8.

Solution

Concept: The Principles of Universal Design were formally articulated in 1997 by a working group comprising architects, product designers, engineers, and environmental design researchers led by Ronald Mace at the **Center for Universal Design, North Carolina State University**. They provide a framework for evaluating and guiding the design of environments and products to be usable by all people without adaptation or specialised design.

Step 1 – The Seven Principles of Universal Design:

1. **Equitable Use** – Useful and marketable to diverse abilities
2. **Flexibility in Use** – Accommodates a wide range of preferences and abilities
3. **Simple and Intuitive Use** – Easy to understand regardless of experience or knowledge
4. **Perceptible Information** – Communicates necessary information effectively
5. **Tolerance for Error** – Minimises hazards and adverse consequences of unintended actions
6. **Low Physical Effort** – Can be used efficiently with minimum fatigue
7. **Size and Space for Approach and Use** – Appropriate size and space regardless of user's body size or mobility

Step 2 – Count: The framework contains exactly **seven (7)** principles, each accompanied by guidelines and performance criteria.

Why other options are wrong:

- (A) 5 – incorrect; five is associated with WCAG POUR conformance criteria, not UD principles.
- (B) 6 – incorrect; the established NC State framework has seven, not six principles.
- (C) 8 – incorrect; no eighth principle is recognised in the standard NC State formulation.

Final Answer: – There are **seven (7)** Principles of Universal Design.

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



Q9.

Solution

Concept: The cradle-to-cradle (C2C) framework was developed by architect **William McDonough** and chemist **Michael Braungart**, formally articulated in their 2002 book *Cradle to Cradle: Remaking the Way We Make Things*. It challenges the conventional linear “cradle-to-grave” model (extract → make → use → discard) and replaces it with a circular model that treats all material outputs as inputs for the next cycle.

Step 1 – Two Material Metabolisms in C2C:

- **Biological Cycle:** Organic/biodegradable materials (timber, natural fibres, bio-based composites) safely decompose and return nutrients to the ecosystem as “food” for the next biological cycle.
- **Technical Cycle:** Synthetic and inorganic materials (metals, glass, polymers) are recovered, reprocessed, and returned to manufacturing at equivalent or higher quality – a perpetual technical metabolism with no downgrading or waste.

Step 2 – Key Distinction: C2C’s defining idea is *waste equals food* – the elimination of the concept of waste entirely through intentional design, as illustrated by the closed loop in the diagram. This is fundamentally different from strategies that merely reduce waste (recycled content [C]) or compensate for emissions (carbon offsetting [D]).

Why other options are wrong:

- (A) 100-year building life – describes durability/longevity strategies, not C2C material philosophy.
- (C) 50% recycled content – a sustainability metric for materials; C2C is a systems concept beyond content percentages.
- (D) Carbon offsetting via renewables – relates to net-zero/carbon-neutral strategies, not C2C material cycles.

Final Answer: **B** – C2C is a **closed-loop material flow** system where all materials cycle perpetually through biological or technical metabolisms, eliminating the concept of waste.

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



Q10.

Solution

Concept: INTACH (Indian National Trust for Art and Cultural Heritage), established in 1984, maintains heritage listings of the built environment across Indian cities and towns. To guide conservation interventions and regulate permissible alterations, INTACH classifies listed structures into a graded system that reflects the degree of heritage significance and the consequent restrictions on change.

Step 1 – INTACH’s Three-Grade Classification:

- **Grade I – Exceptional Heritage:** Structures of outstanding national or state importance, possessing exceptional architectural, historical, or cultural merit. *No alterations whatsoever* are permitted; only conservation, preservation, and scientific restoration are allowed.
- **Grade II – Important Heritage:** Structures of significant regional or local importance. *Minimal and reversible* alterations may be permitted, subject to approval from the heritage conservation authority. Adaptive reuse is possible within strict guidelines.
- **Grade III – Heritage Character:** Structures that contribute positively to the character of the precinct, streetscape, or neighbourhood, even if individually modest. *Sensitive alterations* compatible with the heritage character of the area are permissible.

Step 2 – Alignment with Municipal Regulations: This three-grade framework is reflected in and aligned with the heritage grading systems of major Indian city regulations (e.g., Mumbai’s Heritage Regulations under DCR/DCPR, Delhi’s MPD heritage listings), which also use a Grade I/II/III classification based on INTACH norms.

Why other options are wrong:

- (B) 2 Grades – too coarse for effective conservation guidance; INTACH uses three.
- (C) 4 Grades – INTACH does not employ a four-grade system in its standard listing framework.
- (D) 5 Grades – the INTACH listing framework uses three grades, not five.

Final Answer: – INTACH classifies listed heritage structures into **3 Grades** (Grade I, Grade II, and Grade III).

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



Answer Key

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

