

MAH M Arch CET Current Architecture Practice

Sample Paper – 1

Duration: 12 Minutes

Maximum Marks: 20

Instructions

- This paper contains **10** Multiple Choice Questions (Single Correct Answer), modelled on the Current Architecture Practice 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 level: **NBC 2016, UDCPR 2020, MRTTP Act 1966, Architects Act 1972, and Green Building standards (Section V of MAH M Arch CET)**.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

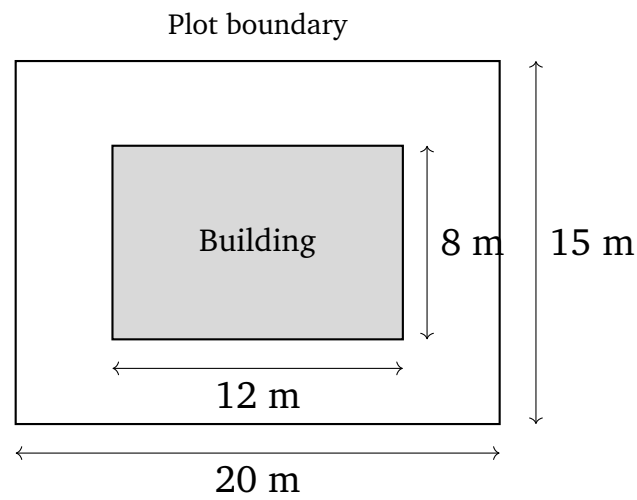
Questions

- Q1.** As per the National Building Code (NBC) of India, 2016, which of the following occupancy groups covers educational buildings such as schools, colleges, and universities?
- (A) Group A – Residential
(B) Group D – Assembly
(C) Group B – Educational
(D) Group E – Business/Offices
- Q2.** According to NBC 2016 Part 4 (Fire and Life Safety), what is the minimum clear width of an exit passageway required for a building with an occupant load of **200 persons**?
- (A) 0.9 m



- (B) 1.5 m
- (C) 2.0 m
- (D) 1.0 m

Q3. A rectangular plot and its proposed building footprint are shown in the diagram below. Based on the dimensions given, what is the **ground coverage** of the building on the plot?



- (A) 32%
- (B) 25%
- (C) 40%
- (D) 48%

Q4. Under the Unified Development Control and Promotion Regulations (UD-CPR) 2020, what is the **base FSI** permitted for **residential development** in the Mumbai Metropolitan Region (MMR) on a road having a width of **9–12 m**?

- (A) 0.75
- (B) 1.5
- (C) 2.0
- (D) 1.0



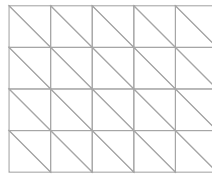
- Q5.** As per UDCPR 2020, what is the **minimum front setback** prescribed for a building of height **up to 15 m** located in a **non-MMR Urban Local Body (ULB)** area?
- (A) 1.5 m
 - (B) 3.0 m
 - (C) 4.5 m
 - (D) 6.0 m
- Q6.** What does **Section 37** of the Maharashtra Regional and Town Planning (MRTP) Act, 1966 primarily deal with?
- (A) Preparation of the Regional Plan
 - (B) Appointment of the Town Planning Officer
 - (C) Acquisition of land reserved for public purposes in a development plan
 - (D) Constitution of a Special Planning Authority
- Q7.** What is the **total number of members** in the Council of Architecture (CoA) as constituted under the **Architects Act, 1972**?
- (A) 26 members
 - (B) 18 members
 - (C) 33 members
 - (D) 21 members
- Q8.** Which of the following is **India's oldest professional body for architects**, established in the year **1929**?
- (A) National Institute of Advanced Studies in Architecture (NIASA)
 - (B) Council of Architecture (CoA)
 - (C) Indian Green Building Council (IGBC)
 - (D) Indian Institute of Architects (IIA)



Q9. What does the acronym **GRIHA** stand for in the context of green building rating systems in India?

- (A) Green Rating for Innovative Habitat Areas
- (B) Green Rating for Integrated Habitat Assessment
- (C) Green Ranking Institute for Housing Architecture
- (D) Global Rating Index for Harmonized Architecture

Q10. The building facade shown below is characterised by **algorithmically generated triangulated panels** whose geometry varies parametrically across the surface. Which contemporary architectural approach does this best exemplify?



Algorithmically generated triangulated facade panels

- (A) Brutalism
- (B) Deconstructivism
- (C) Parametric Architecture
- (D) Biophilic Design



Detailed Solutions**Q1.****Solution**

Concept — NBC 2016 Occupancy Classification: The National Building Code of India, 2016 classifies all buildings into ten principal occupancy groups (A through I) based on the nature of use. Group B is specifically designated for educational occupancies, which includes all buildings used for school or other instructional purposes up to the 12th grade, as well as colleges, universities, and research establishments. Answer: (C). **Step 1 — Identify the correct group:** NBC 2016 Table 2 (Part 4) defines Group B – Educational as covering schools, colleges, training institutions, and universities. This is distinct from Group A (Residential), Group D (Assembly halls, auditoria), and Group E (Business offices).

Step 2 — Eliminate incorrect options:

- Group A (Residential) covers dwellings, hotels, and lodging houses – not educational facilities.
- Group D (Assembly) covers theatres, auditoriums, stadiums, and places of worship.
- Group E (Business/Offices) covers offices, banks, and professional establishments.

Why other options are wrong:

- Option A: Group A – Residential covers dwelling units, not educational institutions.
- Option B: Group D – Assembly applies to places of public gathering such as cinemas and sports arenas.
- Option C: Correct answer – Group B – Educational.
- Option D: Group E – Business/Offices applies to commercial/professional workplaces.

Final Answer: NBC 2016 places schools, colleges, and universities under **Group B – Educational** ⇒

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



Q2.

Solution

Concept — NBC 2016 Part 4 Exit Width Requirements: NBC 2016 Part 4 (Fire and Life Safety) specifies minimum widths for exits – including doors, corridors, and passageways – based on occupant load. These provisions ensure safe egress during emergencies. Answer: (B). **Step 1 — NBC 2016 exit width rule:** As per NBC 2016 Part 4, Clause 4.2, the minimum clear width of any exit passageway, exit corridor, or exit door shall not be less than **1.5 m** for occupant loads up to 200 persons. For every additional 250 persons (or part thereof) beyond 200, an additional 0.3 m is required.

Step 2 — Apply to the given occupant load: For an occupant load of exactly 200 persons, the minimum required exit passageway width is **1.5 m**. A width of 0.9 m is the absolute minimum for any single exit door (not a passageway), 1.0 m is below the threshold, and 2.0 m is prescribed only for larger occupant loads.

Why other options are wrong:

- Option A: 0.9 m is the minimum clear width for an individual exit *door*, not a passageway serving 200 persons.
- Option B: Correct answer – 1.5 m is the prescribed minimum for passageways serving up to 200 persons.
- Option C: 2.0 m would apply to higher occupant loads; it exceeds the minimum requirement here.
- Option D: 1.0 m is below the NBC 2016 minimum for an exit passageway.

Final Answer: Minimum exit passageway width for 200 persons per NBC 2016 Part 4 ⇒ **B**

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

Q3.

Solution

Concept — Ground Coverage (UDCPR): Ground coverage (also called site coverage) is the ratio of the building footprint area to the total plot area, expressed as a percentage. It is a key development control parameter under UDCPR 2020 that limits how much of a plot can be covered by a building at ground level. Answer: (A). **Step 1 — Identify the areas from the diagram:**

$$\text{Plot Area} = 20 \text{ m} \times 15 \text{ m} = 300 \text{ m}^2$$



$$\text{Building Footprint} = 12 \text{ m} \times 8 \text{ m} = 96 \text{ m}^2$$

Step 2 — Calculate ground coverage:

$$\text{Ground Coverage} = \frac{\text{Building Footprint}}{\text{Plot Area}} \times 100 = \frac{96}{300} \times 100 = \mathbf{32\%}$$

Why other options are wrong:

- Option A: Correct answer – 32%.
- Option B: 25% would imply a footprint of 75 m^2 , which does not match the given dimensions.
- Option C: 40% would imply a footprint of 120 m^2 (e.g., $12 \text{ m} \times 10 \text{ m}$), not $12 \text{ m} \times 8 \text{ m}$.
- Option D: 48% would imply a footprint of 144 m^2 , far exceeding the building shown.

Final Answer: Ground coverage = $(96/300) \times 100 = 32\% \Rightarrow \boxed{\text{A}}$

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

Q4.

Solution

Concept — UDCPR 2020 Base FSI in MMR: The Unified Development Control and Promotion Regulations (UDCPR), 2020 establish base (basic/permissible) FSI values for various zones and road widths across Maharashtra. In the Mumbai Metropolitan Region, the base FSI for residential use on roads of 9–12 m width is intentionally kept low, with additional premium FSI available for purchase. Answer: (D). **Step 1 — Locate UDCPR Table for MMR Residential FSI:** As per UDCPR 2020 Table 6.1 (Regulation 6.1), the base FSI for residential buildings in the MMR on plots abutting roads of 9–12 m width is **1.0**. This is the permissible built-up area as a multiple of the plot area before purchasing premium FSI.

Step 2 — Distinguish from other FSI values: An FSI of 0.75 is prescribed for low-density/peripheral zones; 1.5 and 2.0 are applicable to wider roads (15 m and above) or after purchasing premium/incentive FSI. On a 9–12 m road in MMR, the base entitlement remains 1.0.

Why other options are wrong:

- Option A: 0.75 applies to very low-density areas or certain peripheral zones, not to standard MMR residential plots.



- Option B: 1.5 is available for residential use on wider roads (typically ≥ 15 m) or after premium FSI purchase.
- Option C: 2.0 applies to roads of 18 m and above, or with significant premium FSI loading.
- Option D: Correct answer – 1.0 is the base residential FSI for 9–12 m roads in MMR.

Final Answer: Base residential FSI in MMR on 9–12 m road (UDCPR 2020) $\Rightarrow$ **D**

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

Q5.

Solution

Concept — UDCPR 2020 Setback Norms: Setbacks are the minimum distances a building must be set back from the plot boundaries. Front setbacks are measured from the front plot boundary (abutting road). UDCPR 2020 links setback requirements to building height to ensure adequate light, ventilation, and safety.

Answer: (B). Step 1 — UDCPR 2020 Table for Setbacks (non-MMR ULB): As per UDCPR 2020 Regulation 6.2, for buildings up to 15 m in height in non-MMR Urban Local Body areas, the minimum front setback is **3.0 m**. This provision applies across most urban local bodies outside the MMR (e.g., Pune, Nashik, Aurangabad municipal areas).

Step 2 — Correlate height to setback: Buildings exceeding 15 m height require larger setbacks (e.g., 4.5 m for 15–24 m, 6.0 m for taller buildings). A setback of 1.5 m applies only to plots in low-density or non-urban areas. For urban ULBs, the minimum is 3.0 m for heights up to 15 m.

Why other options are wrong:

- Option A: 1.5 m is insufficient for an urban ULB building – it applies to rural/low-density contexts.
- Option B: Correct answer – 3.0 m is the minimum front setback for buildings up to 15 m in non-MMR ULBs.
- Option C: 4.5 m is required for buildings in the 15–24 m height range.
- Option D: 6.0 m is prescribed for taller buildings, typically above 24 m.

Final Answer: Minimum front setback for buildings up to 15 m in non-MMR ULB (UDCPR 2020) = 3.0 m $\Rightarrow$ **B**

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



Q6.

Solution

Concept — MRTP Act 1966 Section 37: The Maharashtra Regional and Town Planning Act, 1966 is the principal legislation governing regional planning and development control in Maharashtra. Each section of the Act deals with a specific planning or administrative function. Answer: (C). **Step 1 — Subject matter of**

Section 37: Section 37 of the MRTP Act, 1966 empowers the Planning Authority to **acquire land reserved for public purposes** in a sanctioned Development Plan. Once a development plan designates land for roads, parks, schools, hospitals, or other public amenities, Section 37 provides the legal mechanism through which such land can be compulsorily acquired after a specified period.

Step 2 — Distinguish from other sections: The preparation and publication of the Regional Plan is governed by Sections 6–14. Appointment of the Town Planning Officer (for town planning schemes) is under Section 66. Constitution of a Special Planning Authority is governed by Section 113 of the Act.

Why other options are wrong:

- Option A: Preparation of the Regional Plan falls under Part II (Sections 6–14), not Section 37.
- Option B: Appointment of the Town Planning Officer is addressed under Sections related to town planning schemes, not Section 37.
- Option C: Correct answer – Section 37 deals with acquisition of land reserved for public purposes in a development plan.
- Option D: Constitution of a Special Planning Authority is governed by Section 113, not Section 37.

Final Answer: MRTP Act 1966 Section 37 → acquisition of land reserved for public purposes ⇒

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

Q7.

Solution

Concept — Composition of the Council of Architecture: The Council of Architecture (CoA) was established under the Architects Act, 1972 as the statutory body regulating architectural education and practice in India. Its membership comprises both elected and nominated members. Answer: (A). **Step 1 — Count**

CoA members under Architects Act 1972: As per Section 3 of the Architects Act,



1972, the Council of Architecture consists of **26 members** in total:

- **15 members** elected by registered architects from the different zones of India.
- **11 members** nominated by the Central Government (including representatives from UGC, AICTE, Ministry of Works and Housing, state governments, etc.).

Total: $15 + 11 = 26$ members.

Step 2 — Why other numbers are incorrect: 18 and 21 do not correspond to any correct breakdown of elected + nominated seats. 33 is also not a statutory figure for the CoA.

Why other options are wrong:

- Option A: Correct answer – 26 members (15 elected + 11 nominated).
- Option B: 18 members is an incorrect count not matching the Architects Act, 1972.
- Option C: 33 members is not the statutory composition of the CoA.
- Option D: 21 members does not reflect the actual breakdown under the Architects Act, 1972.

Final Answer: CoA total membership under Architects Act 1972 = 26 (15 elected + 11 nominated) $\Rightarrow$

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

Q8.

Solution

Concept — History of Professional Bodies for Architecture in India: Several professional organisations serve the architectural community in India, each founded at different periods. Knowing their founding dates is important for understanding the development of the architectural profession in the country. Answer: (D). **Step 1 — Identify the oldest body:** The **Indian Institute of Architects (IIA)** was established in **1929** in Bombay (Mumbai), making it the oldest professional body for architects in India. It was founded even before Independence and before any statutory registration of architects existed.

Step 2 — Compare founding years of other options:

- **IIA:** 1929 – oldest



- **CoA:** Established in 1972 under the Architects Act, 1972 – a statutory body, not a professional association.
- **IGBC:** Founded in 2001 by the CII – focused on green buildings, not general architectural practice.
- **NIASA:** Established as a wing of IIA in later decades for professional development – not an independent body from 1929.

Why other options are wrong:

- Option A: NIASA was not established in 1929; it is a later professional development initiative.
- Option B: CoA was constituted in 1972 as a statutory regulatory body, not a professional membership association.
- Option C: IGBC was founded in 2001 to promote green building practices – far more recent than 1929.
- Option D: Correct answer – IIA, founded in 1929, is India's oldest professional body for architects.

Final Answer: India's oldest professional body for architects (est. 1929) = Indian Institute of Architects (IIA) ⇒ D

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

Q9.

Solution

Concept — GRIHA Green Rating System: GRIHA is India's national green building rating system, developed by The Energy and Resources Institute (TERI) and the Association for Development and Research of Sustainable Habitats (ADaRSH) under the Ministry of New and Renewable Energy (MNRE), Government of India.

Answer: (B). **Step 1 — Full form of GRIHA:** GRIHA stands for **Green Rating for Integrated Habitat Assessment**. The term “integrated” highlights that the system evaluates the built environment holistically, covering site planning, energy efficiency, water conservation, waste management, and indoor environmental quality together rather than in isolation.

Step 2 — Distinguish from distractors: The other options use plausible-sounding but incorrect expansions:

- “Innovative Habitat Areas” (Option A) changes “Integrated” to “Innovative” – incorrect.



- “Ranking Institute for Housing Architecture” (Option C) misrepresents GRIHA as an institute, not a rating system.
- “Global Rating Index for Harmonized Architecture” (Option D) wrongly uses “Global” instead of “Green” and alters the meaning.

Why other options are wrong:

- Option A: “Green Rating for Innovative Habitat Areas” – “Innovative” is incorrect; the correct word is “Integrated.”
- Option B: Correct answer – Green Rating for Integrated Habitat Assessment.
- Option C: “Green Ranking Institute for Housing Architecture” – GRIHA is a rating system, not an institute; “Housing” is also incorrect.
- Option D: “Global Rating Index for Harmonized Architecture” – “Global” and “Index” are both incorrect expansions.

Final Answer: GRIHA = Green Rating for Integrated Habitat Assessment ⇒ B

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

Q10.

Solution

Concept — Parametric Architecture: Parametric architecture is a contemporary design methodology in which building geometry is generated and controlled through algorithmic rules and computational parameters. Architects such as Zaha Hadid, Bjarke Ingels Group (BIG), and Frank Gehry’s studio have employed parametric tools to create complex, non-standard geometries – including triangulated facade systems – that would be impossible to resolve through conventional drafting. Answer: (C). **Step 1 — Interpret the diagram:** The TikZ diagram shows a facade subdivided into a grid of triangles, where each cell is a triangulated panel. In parametric design, such triangulated surfaces are generated by a script or algorithm that maps a geometric rule across a surface – the result being a patterned yet variable system of panels driven by parameters (e.g., depth, rotation angle, perforation ratio).

Step 2 — Distinguish from other movements:

- **Brutalism:** Characterised by raw concrete (béton brut), massive forms, and exposed structure – no algorithmic generation.
- **Deconstructivism:** Uses fragmented, non-rectilinear shapes to challenge conventional spatial logic (e.g., Gehry’s early work, Hadid pre-digital) – not defined by algorithmic repetition of triangular panels.



- **Biophilic Design:** Integrates natural elements, living walls, natural light, and organic forms to connect occupants with nature – unrelated to triangulated computational facades.

Why other options are wrong:

- Option A: Brutalism relies on raw concrete and heavy massing, not algorithmically generated panels.
- Option B: Deconstructivism fragments familiar typologies conceptually; the diagram shows systematic algorithmic tiling, not conceptual fragmentation.
- Option C: Correct answer – Parametric Architecture uses algorithms to generate the complex, repetitive triangulated geometry shown.
- Option D: Biophilic Design focuses on integrating nature into architecture, not computational geometry generation.

Final Answer: Algorithmically generated triangulated facade panels typify **Parametric Architecture** ⇒

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



Answer Key

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

