

ESE Question Bank Module-1

Sr. No.	Question	CO	Blooms Level	Marks
Building Planning Principles, Bye Laws, Concept of Carpet area, Set-back distance and FSI				
1	Describe what is building planning, and what are requirements of good building planning?	1	L2	5
2	List any five principles of planning and explain any two with proper figure.	1	L2	5
3	Define and explain aspect and prospect of a building planning with proper figure.	1	L2	5
4	Define and explain grouping and roominess with proper figure.	1	L2	5
5	State privacy of a building planning and explain about internal and external privacy of building with neat sketch	1	L2	5
6	Describe with neat figure if applicable i) furniture requirements ii) Sanitation with respect to light, ventilation, cleanliness, sanitary conveniences.	1	L2	5
7	Explain with neat figure the importance of flexibility and circulation.	1	L2	5
8	Define elegance and orientation in building planning and how it can be achieved.	1	L2	5
9	Define aspect and grouping in building planning and how it can be achieved with neat sketch.	1	L2	5
10	Describe the significance of roominess and furniture requirements in building planning with neat sketch	1	L2	5
11	Describe the significance of sanitation and circulation requirements in building planning with neat sketch.	1	L2	5
12	Explain elegance, orientation and economy in the context of building planning.	1	L2	5
13	Describe the scope and purpose of building bye-laws.	1	L2	5
14	Explain the significance of open space requirements in bye-laws.	1	L2	5
15	Explain difference between built-up area and carpet area.	1	L2	5
16	Describe the is built-up area and what is covered in it.	1	L2	5
17	Define and explain the term 'set-back distance' in building planning with neat figure.	1	L2	5
18	Define Floor Space Index (FSI), and its important.	1	L2	5
19	Define Floor Space Index (FSI), and Factors affecting FSI.	1	L2	5
20	Explain how internal and external privacy of building can be achieved with neat sketch.	1	L3	5
Overview of natural and built-up environment, Role of environmental engineers in the society, Human population growth and its impact on environment				
21	Discuss the key differences between the natural environment and the built environment. How do they interact with each other?	1	L2	5
22	Explain the impact of rapid urbanization on the natural environment. What challenges do developing countries face in terms of sustainable development?	1	L4	5

23	Explain how do cultural and economic factors influence the development of the built environment?	1	L2	5
24	Discuss the importance of biodiversity in the natural environment.	1	L2	5
25	Explain how can environmental engineers help reduce greenhouse gas emissions and combat climate change?	1	L2	5
26	Explain the role of environmental engineers play in protecting public health?	1	L2	5
27	Explain how do environmental engineers contribute to sustainable development?	1	L2	5
28	Discuss the impact of human population growth on biodiversity	1	L2	5
29	Discuss the role of technology and innovation in mitigating the environmental impact of population growth.	1	L2	5
30	Explain how can family planning and education contribute to reducing the environmental impact of population growth?	1	L2	5
Need of sustainable building design, Green building,				
31	Define Sustainable building and state it's any four environmental benefits.	1	L1	5
32	List key reasons why sustainable building design is essential.	1	L1	5
33	State any five advantages of green building.	1	L1	5
34	Explain in brief on which factors green building focuses.	1	L2	5
35	Describe any three fundamental principles of sustainable building design.	1	L2	5
36	Describe any two green building materials with its use.	1	L2	5
37	Explain in brief use of Recycled plastic in green building design.	1	L2	5
38	Explain in brief use of solar panels according to its use, types and advantages in green building design.	1	L2	5
39	Explain VOC Free paints, its types and applications.	1	L2	5
40	Explain Green Roof its types , components and applications.	1	L2	5
Rainwater harvesting				
41	Define rainwater harvesting and describe its basic components.	1	L2	5
42	List and explain the different steps involved in the process of rainwater harvesting.	1	L2	5
43	Identify and explain three purposes for which harvested rainwater can be used.	1	L2	5
44	Recall and describe the two main types of rainwater harvesting systems.	1	L2	5
45	Explain how rainwater harvesting helps to conserve water.	1	L2	5
46	Discuss the environmental benefits of rainwater harvesting, focusing on its impact on runoff and pollution.	1	L2	5
47	Explain why regular maintenance is necessary for a rainwater harvesting system to function efficiently.	1	L2	5
48	Explain how rainwater harvesting can help during drought conditions.	1	L2	5
49	Summarize the cost-saving benefits of rainwater harvesting for households.	1	L2	5

50	Identify and elaborate 3 examples of non-potable uses for harvested rainwater.	1	L2	5
Concept of green building and ecofriendly materials.				
51	Define a green building and explain its primary objectives.	1	L1	5
52	List any five eco-friendly materials used in green buildings.	1	L1	5
53	What are the characteristics of recycled steel that make it a suitable material for green construction?	1	L1	5
54	State the benefits of using bamboo as a construction material in green buildings.	1	L1	5
55	Explain how green roofs contribute to environmental sustainability.	1	L2	5
56	Discuss the advantages of using Low-E windows in green buildings.	1	L2	5
57	Describe the role of rainwater harvesting in sustainable building design and how it conserves water.	1	L2	5
58	How does the use of natural lighting in green buildings reduce energy consumption?	1	L2	5
59	Compare the environmental impact of conventional concrete and hempcrete. Why is hempcrete considered a more sustainable material?	1	L2	5
60	What are the economic and environmental benefits of using reclaimed wood in green construction?	1	L2	5
61	A building is located in a hot and dry climate. Suggest and justify three green building materials that would be most suitable for use in this environment.	1	L3	5
62	Given a choice between straw bale construction and insulated concrete forms (ICFs) for a green building, which would you recommend and why? Discuss in terms of thermal insulation, sustainability, and cost-effectiveness.	1	L3	5

ESE MCQs Question Bank

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Building Planning Principles, Bye Laws, Concept of Carpet area, Set-back distance and FSI				
1	What does 'aspect' refer to in building planning? A) Arrangement of rooms to enjoy natural gifts B) Positioning of windows C) Direction of sunlight D) Use of local materials Correct Answer: A) Arrangement of rooms to enjoy natural gifts	1	L1	1
2	What is the main purpose of building bye-laws? A) To ensure architectural beauty B) To control urban development C) To promote construction economy D) To restrict materials usage Correct Answer: B) To control urban development	1	L2	1
3	Which room should ideally have an eastern aspect? A) Living room B) Dining room C) Bedroom D) Kitchen Correct Answer: D) Kitchen	1	L2	1
4	What is the function of ventilation? A) To block sunlight B) To maintain air circulation C) To reduce construction cost D) To enhance aesthetics Correct Answer: B) To maintain air circulation	1	L1	1
5	What does 'prospect' mean in building design? A) Position of walls B) Revealing or hiding views C) Use of light colors D) Height of the building Correct Answer: B) Revealing or hiding views	1	L1	1
6	What is meant by 'grouping' in building planning? A) Placing furniture B) Organizing rooms for function C) Designing the exterior D) Decorating interiors Correct Answer: B) Organizing rooms for function	1	L1	1
7	Assess which principle affects internal privacy in a building. A) Proper wall height B) Positioning of doors	1	L2	1

	C) Type of flooring D) Roof design Correct Answer: B) Positioning of doors			
8	Which aspect of planning helps maintain hygiene? A) Furniture arrangement B) Color selection C) Roof design D) Ventilation Correct Answer: D) Ventilation	1	L1	1
9	Which factor affects orientation? A) Number of rooms B) Sun's path C) Wall thickness D) Floor design Correct Answer: B) Sun's path	1	L1	1
10	What is Floor Space Index (FSI)? A) The ratio of walls to floors B) A measure of roof height C) Total built-up area divided by plot area D) Area of each room Correct Answer: C) Total built-up area divided by plot area	1	L1	1
11	What does the 'plinth area' refer to? A) Usable carpet area B) Total plot area C) Built-up area at ground level D) Roof area Correct Answer: C) Built-up area at ground level	1	L1	1
12	What is the effect of using light colors inside a room? A) Makes the room appear smaller B) Enhances lighting and space perception C) Increases construction cost D) Blocks ventilation Correct Answer: B) Enhances lighting and space perception	1	L1	1
13	Which of the following improves external privacy? A) Placing windows low B) Building curved walls C) Using white paint D) Planting tall trees Correct Answer: D) Planting tall trees	1	L2	1
14	What is circulation in building design? A) Movement within and between rooms B) rooms Use of decorative walls C) Design of outdoor areas D) Placement of walls Correct Answer: A) Movement within and between rooms	1	L1	1
15	What is a set-back distance?	1	L1	1

	A) Height of the roof B) Distance between two rooms C) Minimum space from plot boundary D) Width of corridors Correct Answer: C) Minimum space from plot boundary			
16	What does 'elegance' refer to in building design? A) Strength of the structure B) Aesthetic appeal C) Number of floors D) Use of light colors Correct Answer: B) Aesthetic appeal	1	L1	1
17	What is the purpose of chajjas in building design? A) Act as sun breakers B) To support walls C) To allow cross-ventilation D) To enhance room space Correct Answer: A) Act as sun breakers	1	L1	1
18	Which element provides vertical circulation? A) Corridors B) Lobbies C) Staircases D) Balconies Correct Answer: C) Staircases	1	L1	1
19	What type of building should have more set-back distance? A) Residential building B) Cinemas C) Small shops D) Big Shops Correct Answer: B) Cinemas	1	L1	1
20	What is the function of landscaping? A) Building more rooms B) Aesthetic integration with surroundings C) Increasing FSI D) Reducing the building height Correct Answer: B) Aesthetic integration with surroundings	1	L1	1
21	What does 'carpet area' exclude? A) Living rooms B) Corridors C) Bedrooms D) Kitchens Correct Answer: B) Corridors	1	L1	1
22	What does 'plinth height' refer to? A) Height of the walls B) Elevation of the floor above ground C) Length of windows D) Distance between walls	1	L1	1

	Correct Answer: B) Elevation of the floor above ground			
23	Which area is used to calculate FSI? A) Only the carpet area B) Total built-up area C) Open space only D) Staircases and porches only Correct Answer: B) Total built-up area	1	L1	1
Overview of natural and built-up environment, Role of environmental engineers in the society, Human population growth and its impact on environment				
24	Which of the following is an example of a natural environment? A) A city park B) A shopping mall C) A forest D) A highway Correct Answer: C) A forest	1	L2	1
25	What is the primary purpose of the built environment? A) To preserve wildlife B) To provide habitat for humans C) To support natural ecosystems D) To control climate change Correct Answer: B) To provide habitat for humans	1	L2	1
26	Which of the following is a human-made feature in the built environment? A) Mountain ranges B) Oceans C) Bridges D) Forests Correct Answer: C) Bridges	1	L2	1
27	Environmental engineers help prevent air pollution by: A) Reducing emissions from industries and transportation systems B) Constructing high-rise buildings C) Designing highways for traffic control D) Building entertainment complexes Correct Answer: A) Reducing emissions from industries and transportation systems	1	L2	1
28	Which of the following best describes the role of environmental engineers in disaster management? A) They assist in emergency building repairs B) They design systems to minimize environmental damage from natural disasters, such as floods and hurricanes C) They focus only on evacuations during disasters D) They construct temporary shelters Correct Answer: B) They design systems to minimize environmental damage from natural disasters, such as floods and hurricanes	1	L2	1
29	Environmental engineers contribute to public health by:	1	L2	1

	A) Constructing hospitals B) Ensuring access to clean water, air, and sanitation systems C) Creating healthcare policies D) Designing medical devices Correct Answer: B) Ensuring access to clean water, air, and sanitation systems			
30	How does human population growth contribute to deforestation? A) More people plant trees B) The demand for agricultural land and urban expansion increases C) People stop using wood for fuel D) Governments protect all forests Correct Answer: B) The demand for agricultural land and urban expansion increases	1	L2	1
31	What term is used to describe the maximum population size that an environment can sustain over time without degradation? A) Carrying capacity B) Population density C) Urban sprawl D) Biocapacity Correct Answer: A) Carrying capacity	1	L2	1
32	Which of the following strategies can help mitigate the environmental impact of human population growth? A) Encouraging the use of fossil fuels B) Promoting sustainable agriculture and renewable energy sources C) Increasing deforestation to build housing D) Encouraging rapid industrialization Correct Answer: B) Promoting sustainable agriculture and renewable energy sources	1	L2	1
33	What is one of the biggest challenges associated with population growth in developing countries? A) Excess resources for the population B) Strain on infrastructure, water, and sanitation systems C) Improved air quality D) Increased availability of land for farming Correct Answer: B) Strain on infrastructure, water, and sanitation systems	1	L2	1
Need of sustainable building design, Green building				
34	What is the primary goal of sustainable building design? A) Maximize resource consumption B) Minimize negative environmental impacts C) Increase construction costs	1	L1	1

	<p>D) Promote traditional building materials</p> <p>Correct Answer: B) Minimize negative environmental impacts</p>			
35	<p>Which of the following is NOT an environmental benefit of sustainable building design?</p> <p>A) Reduced carbon footprint</p> <p>B) Increased resource consumption</p> <p>C) Enhanced biodiversity</p> <p>D) Conservation of natural resources</p> <p>Correct Answer: B) Increased resource consumption</p>	1	L1	1
36	<p>How do sustainable buildings help mitigate climate change?</p> <p>A) By using more fossil fuels</p> <p>B) By incorporating renewable energy sources</p> <p>C) By increasing energy usage</p> <p>D) By reducing the use of recycled materials</p> <p>Correct Answer: B) By incorporating renewable energy sources</p>	1	L1	1
37	<p>What is one economic advantage of sustainable buildings?</p> <p>A) Higher operational costs</p> <p>B) Lower property values</p> <p>C) Long-term savings on maintenance and operational costs</p> <p>D) Increased need for repairs</p> <p>Correct Answer: C) Long-term savings on maintenance and operational costs</p>	1	L2	1
38	<p>Which feature is commonly associated with enhancing biodiversity in sustainable building design?</p> <p>A) Concrete facades</p>	1	L2	1

	<p>B) Green roofs</p> <p>C) Steel frames</p> <p>D) Single-use plastics</p> <p>Correct Answer: B) Green roofs</p>			
39	<p>Which of the following promotes the conservation of natural resources in sustainable design?</p> <p>A) Use of non-renewable materials</p> <p>B) Use of recycled materials</p> <p>C) Maximizing waste production</p> <p>D) Increasing energy consumption</p> <p>Correct Answer: B) Use of recycled materials</p>	1	L2	1
40	<p>What is one primary use of straw bales in wall construction?</p> <p>A) As a decorative element</p> <p>B) As load-bearing walls or infill in post-and-beam construction</p> <p>C) As a foundation material</p> <p>D) As roofing material</p> <p>Correct Answer: B) As load-bearing walls or infill in post-and-beam construction</p>	1	L2	1
41	<p>Which material is commonly used to plaster straw bale walls?</p> <p>A) Vinyl</p> <p>B) Wood</p> <p>C) Earthen, lime, or cement-based plasters</p> <p>D) Brick</p> <p>Correct Answer: C) Earthen, lime, or cement-based plasters</p>	1	L2	1
42	<p>What challenge must be addressed to ensure the durability of straw bale walls?</p>	1	L2	1

	<p>A) Aesthetics</p> <p>B) Moisture sensitivity</p> <p>C) Height restrictions</p> <p>D) Color matching</p> <p>Correct Answer: B) Moisture sensitivity</p>			
43	<p>Which environmental benefit is associated with using recycled plastic?</p> <p>A) Increased waste in landfills</p> <p>B) Higher fossil fuel consumption</p> <p>C) Waste reduction from landfills and oceans</p> <p>D) Greater carbon emissions</p> <p>Correct Answer: C) Waste reduction from landfills and oceans</p>	1	L2	1
Rainwater harvesting				
44	<p>What is the primary purpose of rainwater harvesting?</p> <p>A) To increase rainfall</p> <p>B) To collect and store rainwater for future use</p> <p>C) To purify groundwater</p> <p>D) To control air pollution</p> <p>Correct Answer: B) To collect and store rainwater for future use</p>	1	L1	1
45	<p>Which of the following is a common surface used for collecting rainwater?</p> <p>A) Roads</p> <p>B) Roofs</p> <p>C) Rivers</p> <p>D) Fields</p> <p>Correct Answer: B) Roofs</p>	1	L1	1
46	<p>Which of the following is NOT a benefit of rainwater harvesting?</p> <p>A) Water conservation</p> <p>B) Reduced energy usage</p> <p>C) Increased water pollution</p> <p>D) Cost savings on water bills</p> <p>Correct Answer: C) Increased water pollution</p>	1	L1	1
47	<p>In the process of rainwater harvesting, what is typically the first step?</p> <p>A) Storage</p>	1	L1	1

	B) Filtration C) Collection D) Distribution Correct Answer: C) Collection			
48	What type of rainwater harvesting system uses small tanks or barrels for non-potable purposes? A) Complex systems B) Permeable surfaces C) Simple systems D) None of the above Correct Answer: C) Simple systems	1	L1	1
49	Why is rainwater often considered better for plants compared to treated tap water? A) It contains more nutrients B) It is free of salts and chemicals C) It is warmer D) It has a higher pH level Correct Answer: B) It is free of salts and chemicals	1	L2	1
50	What is the purpose of filtration in a rainwater harvesting system? A) To store water B) To remove impurities and debris C) To heat the water D) To reduce water pressure Correct Answer: B) To remove impurities and debris	1	L1	1
51	What type of surfaces are designed to allow rainwater to percolate into the ground? A) Impermeable surfaces B) Permeable surfaces C) Reflective surfaces D) Heated surfaces Correct Answer: B) Permeable surfaces	1	L1	1
52	What is one major environmental benefit of rainwater harvesting? A) It increases rainfall B) It reduces soil erosion and water runoff C) It lowers air humidity D) It produces electricity Correct Answer: B) It reduces soil erosion and water runoff	1	L2	1
53	Which of the following uses is NOT typically associated with harvested rainwater? A) Drinking, without any treatment B) Irrigation C) Flushing toilets D) Washing clothes Correct Answer: A) Drinking, without any treatment	1	L2	1

Concept of green building and ecofriendly materials.				
54	What is the primary purpose of a green building? A) Aesthetic value B) Cost reduction C) Energy efficiency D) Shorter construction time Correct Answer: C) Energy efficiency	1	L1	1
55	Which of the following is a common green building material? A) Asphalt B) Bamboo C) Plastic D) Vinyl Correct Answer: B) Bamboo	1	L1	1
56	Green buildings aim to reduce environmental impacts during which stage of the building's life cycle? A) Operation B) Design C) Demolition D) All of the above Correct Answer: D) All of the above	1	L1	1
57	Which certification system is used to rate green buildings in India? A) LEED B) BEE C) GRIHA D) All of the above Correct Answer: D) All of the above	1	L1	1
58	What does VOC-free paint contribute to in green buildings? A) Higher durability B) Improved indoor air quality C) Higher maintenance cost D) Increased fire resistance Correct Answer: B) Improved indoor air quality	1	L1	1
59	Which material used in green building has a high thermal mass? A) Wood B) Rammed Earth C) PVC D) Fiberglass Correct Answer: B) Rammed Earth	1	L1	1
60	What is the main environmental benefit of using recycled steel in construction? A) Lower energy consumption B) Faster construction C) Increased flexibility D) Lower labor costs Correct Answer: A) Lower energy consumption	1	L1	1

61	How do green roofs help mitigate the urban heat island effect? A) By absorbing CO2 B) By providing insulation C) By reflecting sunlight D) By increasing energy consumption Correct Answer: B) By providing insulation	1	L2	1
62	What is the benefit of using rammed earth walls in sustainable construction? A) Faster construction B) Higher strength-to-weight ratio C) High thermal mass and durability D) Flexibility in design Correct Answer: C) High thermal mass and durability	1	L2	1
63	Why is bamboo considered an eco-friendly material in construction? A) It is expensive to produce B) It grows slowly C) It requires a lot of water to grow D) It is renewable and grows quickly Correct Answer: D) It is renewable and grows quickly	1	L2	1