

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: OPEN ELECTIVE
BRANCH: ARCHITECTURE & PLANNING**

**SEMESTER : II
SESSION : SP/2025**

SUBJECT: AR703 SUSTAINABLE CITY PLANNING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a) What is the primary goal of sustainability in city planning? a) Prioritizing economic growth b) Meeting the needs of the present without compromising future generations c) Increasing carbon emissions d) Expanding urban sprawl	[1]	1 1
Q.1(b) What does social equity aim to ensure in urban development? a) Equal access to healthcare and education b) Privatization of public services c) Profit maximization for corporations d) Exclusivity of housing for the wealthy	[1]	1 1
Q.1(c) What does compact and mixed-use development aim to achieve? a) Increase the need for long commutes b) Isolate residential areas from commercial zones c) Enhance social interaction within neighborhoods d) Exacerbate traffic congestion	[1]	1 1
Q.1(d) What does the principle of economic viability emphasize? a) Prioritizing economic growth at any cost b) Balancing economic prosperity, social well-being, and environmental conservation c) Ignoring economic factors in city planning d) Focusing solely on large corporations	[1]	1 1
Q.1(e) What is the purpose of preserving open spaces in urban areas? a) Encouraging urban sprawl b) Providing land for industrial development c) Enhancing biodiversity and recreational areas d) Increasing traffic congestion	[1]	1 1
Q.1(f) Which of the following is a key principle of Vastu Shastra when designing buildings? A) Maximizing energy consumption B) Ignoring cardinal directions C) Orienting structures with the sun's path D) Minimizing ventilation	[1]	1 1
Q.1(g) The ancient Indian cities of Mohenjo-Daro and Harappa are known for their: A) Holographic projections B) Grid-based urban planning C) Underground transportation systems D) Vertical farming techniques	[1]	1 1
Q.1(h) Which visionary introduced the concept of "Garden Cities" as a response to urban congestion and industrialization? A) Clarence Perry B) Clarence Stein C) Ebenezer Howard D) Henry Wright	[1]	1 1
Q.1(i) What does the "Garden City" concept emphasize? A) Maximum population growth B) Isolation from nature C) Efficient public transportation D) A balance between urban and rural elements	[1]	1 1

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Q.1(j)	The BedZED project is known for its emphasis on: A) Maximizing carbon emissions B) Urban sprawl C) Zero carbon emissions and sustainable building practices D) Excessive water consumption	[1]	1	1
Q.2(a)	State the full form of FAR and describe its application as a tool in the field of city planning.	[5]	1	4
Q.2(b)	How does Vastu Shastra contribute to sustainable architecture?	[5]	2	2
Q.3(a)	Define the characteristics of slums and elaborate on the factors responsible for their emergence.	[5]	1	5
Q.3(b)	Name any three clean city initiatives in India and write their goals.	[5]	2	2
Q.4(a)	Describe the operational workflow of a Sewage Treatment Plant (STP) and emphasize its significance in the context of sustainable urban planning.	[5]	2	4
Q.4(b)	Discuss the concept of green infrastructure and its role in promoting environmental sustainability along with enhancing the quality of urban life.	[5]	2	5
Q.5(a)	Define the term 'Sustainable Development Goals' and elucidate four of its key objectives.	[5]	1	3
Q.5(b)	Prepare a sustainability matrix for any one Indian city of your choice, detailing the relevant Sustainable Development Goals (SDGs), associated targets, and measurable parameters along with their respective units.	[5]	2	6

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