Graduate Aptitude Test in Engineering

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name: AR: ARCHITECTURE AND PLANNING 31st Jan Shift1
Number of Questions: 65
Total Marks: 100.0

General Aptitude

Number of Questions: 10
Section Marks: 15.0

Question Number : 1 Question Type : MCQ

Choose the most appropriate word from the options given below to complete the following sentence.

The principal presented the chief guest with a _____, as token of appreciation.

(A) momento (B) memento (C) momentum (D) moment

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 2 Question Type : MCQ

Choose the appropriate word/phrase, out of the four options given below, to complete the following sentence:

Frogs _____.

(A) croak (B) roar (C) hiss (D) patter

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 3 Question Type : MCQ

Choose the word most similar in meaning to the given word:

Educe

(A) Exert (B) Educate (C) Extract (D) Extend

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 4 Question Type : MCQ

Operators □, ◊ and → are defined by: $a \square b = \frac{a-b}{a+b}$; $a \lozenge b = \frac{a+b}{a-b}$; $a \rightarrow b = ab$.

Find the value of $(66 \square 6) \rightarrow (66 \lozenge 6)$.

(A) −2 (B) −1 (C) 1 (D) 2

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 5 Question Type : MCQ

If $\log_x (5/7) = -1/3$, then the value of x is

(A) 343/125
(B) 125/343
(C) −25/49
(D) −49/25

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 6 Question Type : MCQ

The following question presents a sentence, part of which is underlined. Beneath the sentence you find four ways of phrasing the underlined part. Following the requirements of the standard written English, select the answer that produces the most effective sentence.

Tuberculosis, together with its effects, ranks one of the leading causes of death in India.

(A) ranks as one of the leading causes of death
(B) rank as one of the leading causes of death
(C) has the rank of one of the leading causes of death
(D) are one of the leading causes of death

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 7 Question Type : MCQ

Read the following paragraph and choose the correct statement.

Climate change has reduced human security and threatened human well being. An ignored reality of human progress is that human security largely depends upon environmental security. But on the contrary, human progress seems contradictory to environmental security. To keep up both at the required level is a challenge to be addressed by one and all. One of the ways to curb the climate change may be suitable scientific innovations, while the other may be the Gandhian perspective on small scale progress with focus on sustainability.

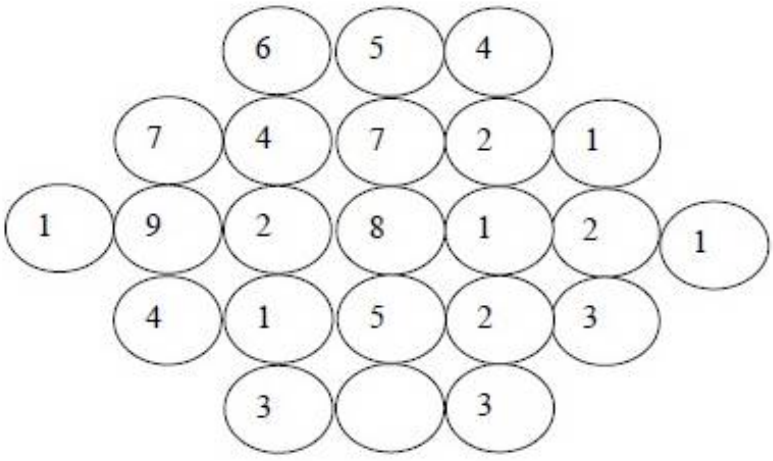
(A) Human progress and security are positively associated with environmental security.
(B) Human progress is contradictory to environmental security.
(C) Human security is contradictory to environmental security.
(D) Human progress depends upon environmental security.

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 8 Question Type : NAT

Fill in the missing value



Correct Answer:

3

Question Number : 9 Question Type : MCQ

A cube of side 3 units is formed using a set of smaller cubes of side 1 unit. Find the proportion of the number of faces of the smaller cubes visible to those which are NOT visible.

(A) 1 : 4 (B) 1 : 3 (C) 1 : 2 (D) 2 : 3

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 10 Question Type : MCQ

Humpty Dumpty sits on a wall every day while having lunch. The wall sometimes breaks. A person sitting on the wall falls if the wall breaks.

Which one of the statements below is logically valid and can be inferred from the above sentences?

(A) Humpty Dumpty always falls while having lunch
(B) Humpty Dumpty does not fall sometimes while having lunch
(C) Humpty Dumpty never falls during dinner
(D) When Humpty Dumpty does not sit on the wall, the wall does not break

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Architecture and Planning

Number of Questions:	55
Section Marks:	85.0

Question Number : 11 Question Type : MCQ

A Housing Finance Institution in the private sector is

(A) HUDCO (B) SBI (C) PNB (D) HDFC

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 12 Question Type : MCQ

Which of the following statements regarding PERT is **NOT** true?

(A) Each activity of PERT network has three different time estimates
(B) Expected activity time is estimated based on β-distribution
(C) PERT is a deterministic model
(D) PERT network may have more than one critical path

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 13 Question Type : MCQ

Damage of foundation due to 'Soil Liquefaction' is related to

(A) Cyclones (B) Landslides (C) Floods (D) Earthquakes

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 14 Question Type : MCQ

Walls with high thermal inertia are suitable in which type of climate?

(A) Hot-dry (B) Hot-humid (C) Temperate (D) Cold

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 15 Question Type : MCQ

The ratio of town area to agricultural land area as suggested by Sir Ebenezer Howard in 'Garden City' concept is

(A) 1:20 (B) 1:15 (C) 1:10 (D) 1:5

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 16 Question Type : MCQ

A 'Demolition Contract' for a building is awarded to the

(A) Lowest Bidder
(B) Highest Bidder
(C) Second Lowest Bidder
(D) Second Highest Bidder

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 17 Question Type : MCQ

Bulking of sand is highest in

(A) Coarse sand
(B) Medium sand
(C) Fine sand
(D) Sand saturated with water

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 18 Question Type : MCQ

The Venice Charter (1964) led to the establishment of

(A) International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM)
(B) International Council on Monuments and Sites (ICOMOS)
(C) Indian National Trust for Art and Cultural Heritage (INTACH)
(D) Archaeological Survey of India (ASI)

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 19 Question Type : MCQ

The ratio between *illumination at a working point indoor* to *total light available simultaneously outdoor* is known as

(A) Daylight Factor
(B) Sky Component
(C) Internally Reflected Component
(D) Externally Reflected Component

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 20 Question Type : MCQ

Which of the following vehicular traffic intersections converts all crossing into merging and diverging sequences?

(A) Rotary
(B) Manual Signaling
(C) Grade Separation
(D) Automatic Signaling

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 21 Question Type : MCQ

The process of spraying Polyester, Polyurethane, Acrylic and Epoxy Plastic, followed by heat curing onto metals is called

(A) Anodizing
(B) Galvanizing
(C) Vitreous Enameling
(D) Powder Coating

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 22 Question Type : MCQ

The fundamental right pertaining to property ownership in India **DOES NOT** embrace:

(A) Sell, Lease, Donate or Bequeath
(B) Mortgage
(C) Grant Easement
(D) Change in use

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 23 Question Type : MCQ

Match the **Elements** in Group - I with their **Applications** in Group – II

Group – I		Group – II	
P	Bracket	1	Door
Q	Baluster	2	Dome
R	Key stone	3	Cornice
S	Holdfast	4	Arch
		5	Staircase

(A) P-2, Q-5, R-3, S-1
(B) P-3, Q-5, R-4, S-1
(C) P-3, Q-1, R-4, S-5
(D) P-2, Q-1, R-3, S-4

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 24 Question Type : MCQ

Match the **Buildings** in Group-I with their **Principal Architects** in Group-II

Group – I		Group – II	
P	Wexner Centre for the Visual Arts, Ohio	1	I. M. Pei
Q	Vitra Fire station, Weilam Rhein, Germany	2	Peter Eisenman
R	AT&T Building, New York	3	Louis Kahn
S	Sher–e–Banglanagar, Dacca	4	Zaha Hadid
		5	Philip Johnson

(A) P-2, Q-4, R-5, S-3
(B) P-3, Q-5, R-4, S-1
(C) P-1, Q-2, R-5, S-3
(D) P-2, Q-4, R-1, S-5

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 25 Question Type : MCQ

A combination of colours forming an equilateral triangle in a Colour Wheel is called

(A) Analogous Scheme
(B) Triad Scheme
(C) Split Complementary Scheme
(D) Double Complementary Scheme

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 26 Question Type : MCQ

Desire Line diagram helps in

(A) completion of a project by a desired date
(B) meeting demand and supply in desired category of housing
(C) determining income versus expenditure pattern of individuals
(D) Origin-Destination analysis in transport planning

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 27 Question Type : MCQ

As per Fire Safety norms of NBC India for buildings having assembly and institutional occupancies, the maximum travel distance in meters to an exit from the dead end of a corridor is

(A) 30 (B) 24 (C) 12 (D) 6

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 28 Question Type : MCQ

Which of the following is a part of a studio apartment?

(A) Master bed room
(B) Artist's room
(C) Multipurpose space
(D) Children's room

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 29 Question Type : MCQ

The Saturation level of a colour represents

(A) distribution (B) brilliance (C) darkness (D) warmth

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 30 Question Type : MCQ

Invert level of a pipe at a given cross section refers to the

(A) highest point of the internal surface
(B) lowest point of the internal surface
(C) highest point of the external surface
(D) lowest point of the external surface

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 31 Question Type : MCQ

The command DVIEW in AutoCAD permits to view

(A) a selected portion of the drawing in detail
(B) the entire screen on the monitor
(C) a perspective of the drawing
(D) a damaged part of the drawing

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 32 Question Type : MCQ

Match the **Land use categories** of Group – I with their respective **Colour codes** in Group – II as per practice in India

Group – I		Group – II	
P	Residential	1	Red
Q	Commercial	2	Grey
R	Industrial	3	Blue
S	Public / Semi-public	4	Violet
		5	Yellow

(A) P – 5, Q – 3 , R – 4 , S – 1
(B) P – 5, Q – 4 , R – 2 , S – 1
(C) P – 1, Q – 2 , R – 4 , S – 5
(D) P – 1, Q – 3 , R – 2 , S – 4

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 33 Question Type :NAT

A rectangular beam section of size 300 mm (width) X 500 mm (depth) is loaded with a shear force of 600 kN. The maximum shear stress on the section in N/mm^2 is _____

Correct Answer :
6

Question Number : 34 Question Type : NAT

In a 50 meter section of a waste water pipe, if the gradient is 1 in 80, then the fall in millimeter is _____

Correct Answer :
625

Question Number : 35 Question Type : NAT

A 15 meter long and 3 meter wide driveway needs to be paved with 300 mm X 300 mm square tiles. If each packet contains 30 numbers of tiles, then the number of packets to be procured to pave the whole area is _____

Correct Answer:
16.5 to 17.0

Question Number : 36 Question Type : MCQ

Match the **Monuments** in Group-I with their **Features** in Group-II

	Group-I		Group-II
P	Panch Mahal, Fathepur Sikri	1	Painted Stone Figures
Q	Meenakshi Temple, Madurai	2	Intricate Red Sand Stone Carvings
R	Jor-Bangla Temple, Bishnupur	3	Granite Statues
S	Sun Temple, Konark	4	Khondalite Stone Work
		5	Terracotta Carvings

(A) P – 2 , Q – 1 , R – 4 , S – 3
(B) P – 2 , Q – 1 , R – 5 , S – 4
(C) P – 2 , Q – 4 , R – 1 , S – 3
(D) P – 1 , Q – 5 , R – 5 , S – 4

Options :
1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 37 Question Type : MCQ

Match the **Monuments** in Group-I with their **Style of Architecture** in Group-II

	Group-I		Group-II
P	Pisa Cathedral, Italy	1	Gothic
Q	St. Hagia Sophia, Istanbul	2	Moorish
R	Great Temple of Aman, Karnak	3	Egyptian
S	Cathedral of Notre Dame, Paris	4	Byzantine
		5	Romanesque

(A) P – 5 , Q – 1 , R – 3 , S – 2
(B) P – 2 , Q – 4 , R – 3 , S – 5
(C) P – 4 , Q – 2 , R – 5 , S – 1
(D) P – 5 , Q – 4 , R – 3 , S – 1

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 38 Question Type : MCQ

Match the **Buildings** in Group-I with their **Style of Architecture** in Group-II

	Group-I		Group-II
P	Rashtrapati Bhawan, New Delhi	1	Industrial Architecture
Q	German Pavilion for World Exhibition, Barcelona	2	Deconstruction
R	Guggenheim Museum, Bilbao	3	Radical Eclecticism
S	Crystal Palace, London	4	International Style
		5	Neo Classical

(A) P – 5 , Q – 3 , R – 2 , S – 1
(B) P – 5 , Q – 4 , R – 2 , S – 1
(C) P – 1 , Q – 5 , R – 4 , S – 3
(D) P – 3 , Q – 4 , R – 1 , S – 5

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 39 Question Type : MCQ

Match the **Terms** in Group – I with their **Definitions** in Group – II

	Group-I		Group-II
P	Kinesthesia	1	Measurement and study of size and proportions of human body
Q	Anthropometry	2	Study of man – machine interaction
R	Ergonomics	3	Study of past and present of the human race
S	Biomimicry	4	Study of human sensory experience during movement
		5	Imitation of models, systems and elements of nature

(A) P – 5 , Q – 3 , R – 4 , S – 1
(B) P – 5 , Q – 2 , R – 4 , S – 3
(C) P – 4 , Q – 1 , R – 2 , S – 5
(D) P – 4 , Q – 1 , R – 2 , S – 3

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 40 Question Type : MCQ

Match the following **Urban Spaces** in Group-I with their **Names** in Group-II

Group-I		Group-II	
P		1	Piazza del Campo, Sienna
Q		2	Forum, Rome
R		3	Trafalgar Square, London
S		4	Agora, Athens
		5	St. Peter's Square, Rome

(A) P – 4 , Q – 1 , R – 2 , S – 3
(B) P – 2 , Q – 3 , R – 1 , S – 5
(C) P – 4 , Q – 3 , R – 1 , S – 5
(D) P – 2 , Q – 1 , R – 4 , S – 3

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 41 Question Type : MCQ

Match the **Terms** in Group – I with the appropriate **Items** in Group – II

Group-I		Group-II	
P	Toposheet	1	Path/Row
Q	Satellite Image	2	Contour
R	Wavelength	3	Focal Length
S	Scan Line	4	Spectral Signature
		5	Bits/inch

(A) P – 5 , Q – 4 , R – 2 , S – 1
(B) P – 5 , Q – 1 , R – 4 , S – 3
(C) P – 2 , Q – 1 , R – 4 , S – 5
(D) P – 2 , Q – 4 , R – 1 , S – 5

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 42 Question Type : MCQ

Match the **Concepts** in Group – I with their appropriate **Explanation** in Group – II

Group-I		Group-II	
P	Planned Unit Development	1	Development occurring on vacant or underused lots in otherwise built up areas
Q	Infill Development	2	Development providing a fair and equitable way to integrate peri-urban areas
R	Transit Oriented Development	3	Developing a large area as a single entity merging zoning and subdivision control
S	Mixed Use Development	4	Development with compatible land uses integrating varied activities at different times of the day
		5	Development located within walking distance from mass transit stations along the corridor

(A) P – 3 , Q – 2 , R – 5 , S – 4
(B) P – 3 , Q – 1 , R – 5 , S – 4
(C) P – 2 , Q – 1 , R – 4 , S – 5
(D) P – 2 , Q – 4 , R – 1 , S – 5

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 43 Question Type : MCQ

Particles of soil in **descending order** of grain size is

(A) Gravel – Sand – Silt – Clay
(B) Gravel – Sand – Clay – Silt
(C) Sand – Gravel – Clay – Silt
(D) Clay – Gravel – Sand – Silt

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 44 Question Type : MCQ

Match the **Units** in Group – I with their **Definitions** in Group – II

	Group-I		Group-II
P	Hertz	1	Newton - meter
Q	Lux	2	Cycles / second
R	Joule	3	Lumen / m^2
S	Newton	4	Watt / ampere
		5	kg - meter / sec^2

(A) P – 5 , Q – 4 , R – 2 , S – 1
(B) P – 3 , Q – 1 , R – 5 , S – 4
(C) P – 2 , Q – 3 , R – 1 , S – 4
(D) P – 2 , Q – 3 , R – 1 , S – 5

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 45 Question Type : MCQ

Match the **Energy Efficient Building Elements** in Group-I with their associated **Working Principles** in Group-II

	Group-I		Group-II
P	Solar Chimney	1	Thermal Storage
Q	Earth Air Tunnel	2	Radiant Cooling
R	Trombe Wall	3	Stack Effect
S	Chilled Slab	4	Cross Ventilation
		5	Geothermal Energy

(A) P – 3 , Q – 2 , R – 4 , S – 5
(B) P – 5 , Q – 2 , R – 4 , S – 3
(C) P – 3 , Q – 5 , R – 1 , S – 2
(D) P – 4 , Q – 5 , R – 1 , S – 2

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 46 Question Type : MCQ

Match the **Vibrator Types** in Group-I with their related **Areas of Application** in Group-II

	Group-I		Group-II
P	Needle Vibrator	1	Concrete Pavement
Q	Shutter Vibrator	2	Pre-cast Concrete Unit
R	Surface Vibrator	3	Beam-Column Junction
S	Table Vibrator	4	Retaining Wall
		5	Slip Forming

(A) P – 1 , Q – 5 , R – 4 , S – 3
(B) P – 3 , Q – 4 , R – 1 , S – 2
(C) P – 1 , Q – 4 , R – 2 , S – 5
(D) P – 3 , Q – 5 , R – 1 , S – 2

Options :

1. ✖ A
2. ✔ B
3. ✖ C
4. ✖ D

Question Number : 47 Question Type : MCQ

Match the type of **Temporary Structures** in Group – I with their corresponding **Functions** in Group – II

	Group-I		Group-II
P	Scaffolding	1	To support unsafe structure
Q	Formwork	2	To support platforms for workmen and materials at raised height during construction
R	Shoring	3	Removal of water from pits
S	Underpinning	4	Mould for RCC Structure
		5	Strengthening the existing foundation

(A) P – 2 , Q – 4 , R – 1 , S – 5
(B) P – 3 , Q – 5 , R – 1 , S – 2
(C) P – 3 , Q – 4 , R – 5 , S – 2
(D) P – 2 , Q – 3 , R – 4 , S – 5

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 48 Question Type : MCQ

Match following **Scientific Names** in Group – I with their common **Indian Names** in Group – II

	Group-I		Group-II
P	Lagerstroemia speciosa	1	Amaltas
Q	Cassia fistula	2	Neem
R	Azadarachta indica	3	Jarul
S	Acacia auriculiformis	4	Babul
		5	Peepal

(A) P – 2 , Q – 4 , R – 3 , S – 5
(B) P – 5 , Q – 3 , R – 2 , S – 4
(C) P – 3 , Q – 1 , R – 4 , S – 2
(D) P – 3 , Q – 1 , R – 2 , S – 4

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 49 Question Type : MCQ

A man starts from his residence and uses the following modes in sequence to reach his office - cycle rickshaw to railway station, then train to destination station, followed by auto-rickshaw to nearby bus stand and finally a bus to his office. Which of the following describes his sequence of transit usage?

(A) Non Motorised Transit – Paratransit – Mass Transit – Public Transit
(B) Paratransit – Public Transit – Non Motorised Transit – Mass Transit
(C) Private Transit – Public Transit – Non Motorised Transit – Mass Transit
(D) Non Motorised Transit – Mass Transit – Paratransit – Public Transit

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 50 Question Type : MCQ

PMGSY and JNNURM are two Indian Government programmes which deal with

(A) rural road development and urban basic service improvement respectively
(B) rural sanitation services and under-developed road maintenance respectively
(C) peri-urban basic services and urban basic service improvement respectively
(D) rural road development and urban transport development respectively

Options :

1. ✔ A
2. ✖ B
3. ✖ C
4. ✖ D

Question Number : 51 Question Type : MCQ

Match the **Planning Terms** in Group – I with their **Descriptions** in Group – II.

	Group-I		Group-II
P	Gentrification	1	Haphazard and low density outward growth of urban area
Q	Urban core revitalization	2	Primarily dormitory settlement with functional dependency on parent city
R	Urban sprawl	3	Replacement of low income residents with high income population
S	Satellite town	4	Physical and socio-economic revival of the inner-city
		5	Restricted development in an environmentally sensitive zone

(A) P – 4 , Q – 3 , R – 5 , S – 2
(B) P – 3 , Q – 4 , R – 1 , S – 5
(C) P – 1 , Q – 5 , R – 2 , S – 3
(D) P – 3 , Q – 4 , R – 1 , S – 2

Options :

1. ✖ A
2. ✖ B
3. ✖ C
4. ✔ D

Question Number : 52 Question Type : MCQ

Match the **Planning Concepts** in Group – I with their **Corresponding Proponents** in Group – II

	Group-I		Group-II
P	Broadacre city	1	Le Corbusier
Q	Radiant city	2	F. L. Wright
R	Industrial town	3	Robert Owen
S	Arcosanti	4	Henry Wright
		5	Paolo Soleri

(A) P – 1 , Q – 4 , R – 3 , S – 5
(B) P – 1 , Q – 3 , R – 5 , S – 2
(C) P – 2 , Q – 1 , R – 3 , S – 5
(D) P – 2 , Q – 1 , R – 5 , S – 4

Options :

1. ✖ A
2. ✖ B
3. ✔ C
4. ✖ D

Question Number : 53 Question Type : NAT

The housing stock of a town has total number of 9090 dwelling units. Present population of the town is 45,450. Assuming an average household size of 4.5, the housing shortage in percentage is _____

Correct Answer :

10

Question Number : 54 Question Type : NAT

A hall is 15 m long and 12 m wide. If the sum of areas of the floor and ceiling is equal to the sum of the area of its four walls, then the volume of the hall in cubic meter is _____

Correct Answer :
1200

Question Number : 55 Question Type : NAT

The actual roof area of a building is 3,60,000 sqm, which on a site plan measures 25 sqcm. The scale of the site plan is 1 : _____

Correct Answer:
12000

Question Number : 56 Question Type : NAT

If the annual net income from a commercial property is Rs 22,000/- and the interest rate is 8%, then the capitalized value in rupees of the property in perpetuity is _____

Correct Answer :
275000

Question Number : 57 Question Type : NAT

A five storied building is constructed on a 100 m x 50 m plot having ground coverage of 60% (option 1). Alternatively, a four storied building is constructed on the same plot with a 50% ground coverage (option 2). The ratio of FARs between options 1 and 2 is _____

Correct Answer :
1.5

Question Number : 58 Question Type : NAT

If a roof is treated with a layer of thermal insulation material, the internal heat gain is reduced by 60%. The U-value of the roof slab (without thermal insulation) is 3 W m^2 / $^\circ$C. Assuming a constant temperature difference between indoor and outdoor, the U-value of the thermal insulation layer in W m^2 / $^\circ$C is _____

Correct Answer :
2

Question Number : 59 Question Type : NAT

A simply supported beam having effective span of 5 meter is carrying a centrally concentrated load of 16 kN. The maximum bending moment in the beam in kN-m is _____

Correct Answer :
20

Question Number : 60 Question Type : NAT

A landscaped garden with irregular profile and minor undulations, measuring 35,000 sqm, has a total surface area covered with 20% brick paving, 15% cement concrete paving, and rest with grass. The peak intensity of rainfall in that region is 70 mm/hr. The coefficient of runoff for brick paving, cement concrete paving and grass is 0.8, 0.9 and 0.5 respectively. The estimated quantity of runoff in cubic meter/hr for the entire garden area is _____

Correct Answer :
1510 to 1530

Question Number : 61 Question Type : NAT

The number of standard cement bags required to prepare 1400 kg of concrete in the ratio of 1 : 2 : 4 (mixed by weight batching) is_____

Correct Answer:
4

Question Number : 62 Question Type : NAT

A class room measuring 10 m (L) x 8 m (B) x 2.7 m (H) requires an illumination level of 500 lux on the desk level using 40 W fluorescent lamps with rated output of 5000 lumens each. Assuming utilization factor of 0.5 and maintenance factor of 0.8, the number of lamps required is _____

Correct Answer :
20

Question Number : 63 Question Type : NAT

Area of tensile steel per meter width of a reinforced concrete slab is 335 sq mm. If 8 mm rods are used as reinforcement, then centre to centre spacing of the reinforcement in mm is _____

Correct Answer:
145 to 155

Question Number : 64 Question Type : NAT

The population of a town as per Census 2011 was 22,730 and the population as per census 2001 was 15,770. Considering arithmetic projection of growth, the projected population in 2016 will be _____

Correct Answer:
26178 to 26210

Question Number : 65 Question Type : NAT

Two concrete mixers of capacity 200 liters each are used in a construction site to produce 20 cubic meter of concrete. Ingredient charging, mixing and discharge times are 3 minutes, 7 minutes and 1 minute respectively. Assuming a time loss of 5 minutes per hour of operation, the total time in hours for the mixers to produce the required amount of concrete will be _____

Correct Answer:
9.9 to 10