



GATE AR 2024 PRELIMINARY ANS KEY

KP GATE CLASSES +91 95602 52666

Section : General Aptitude

Q.1 How many 4-digit positive integers divisible by 3 can be formed using only the digits {1, 3, 4, 6, 7}, such that no digit appears more than once in a number?

D

Options

A. 72

B. 12

C. 24

D. 48

Question Type : MCQ

Question ID : 6420084494

Status : Not Answered



Q.2 If '→' denotes increasing order of intensity, then the meaning of the words [sick → infirm → moribund] is analogous to [silly → _____ → daft].

B

Which one of the given options is appropriate to fill the blank?

Options

- A. frown
- B. vain
- C. vein
- D. fawn

Question Type : **MCQ**

Question ID : **6420084492**

Status : **Not Answered**

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Q.3

Person 1 and Person 2 invest in three mutual funds A, B, and C. The amounts they invest in each of these mutual funds are given in the table.

A

	Mutual fund A	Mutual fund B	Mutual fund C
Person 1	₹10,000	₹20,000	₹20,000
Person 2	₹20,000	₹15,000	₹15,000

At the end of one year, the total amount that Person 1 gets is ₹500 more than Person 2. The annual rate of return for the mutual funds B and C is 15% each. What is the annual rate of return for the mutual fund A?

Options

- A. 7.5%
- B. 10%
- C. 15%
- D. 20%

Question Type : **MCQ**Question ID : **6420084499**Status : **Answered**



Q.4

The probability of a boy or a girl being born is $\frac{1}{2}$. For a family having only three children, what is the probability of having two girls and one boy?

A

Options

A. $\frac{3}{8}$

B. $\frac{1}{4}$

C. $\frac{1}{2}$

D. $\frac{1}{8}$

Question Type : MCQ

Question ID : 6420084498

Status : Answered

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Q.5 Visualize two identical right circular cones such that one is inverted over the other and they share a common circular base. If a cutting plane passes through the vertices of the assembled cones, what shape does the outer boundary of the resulting cross-section make?

B

Options

- A. An ellipse
- B. A hexagon
- C. A triangle
- D. A rhombus

Question Type : **MCQ**

Question ID : **6420084501**

Status : **Answered**

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Q.6

Thousands of years ago, some people began dairy farming. This coincided with a number of mutations in a particular gene that resulted in these people developing the ability to digest dairy milk.

B

Based on the given passage, which of the following can be inferred?

Options

- A. All human beings can digest dairy milk.
- B. In human beings, digestion of dairy milk resulted from a mutated gene.
- C. Digestion of dairy milk is essential for human beings.
- D. No human being can digest dairy milk.

Question Type : MCQ

Question ID : 6420084497

Status : Answered



Q.7

The sum of the following infinite series is

$$2 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{8} + \frac{1}{9} + \frac{1}{16} + \frac{1}{27} + \dots$$

A

Options

A. $7/2$

B. $9/2$

C. $11/3$

D. $13/4$

Question Type : **MCQ**

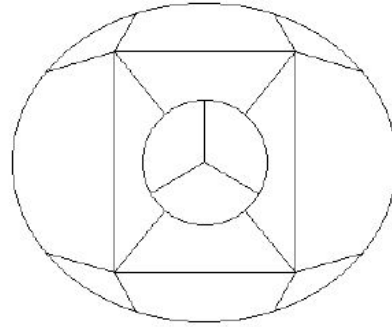
Question ID : **6420084495**

Status : **Not Answered**

Chosen Option :

Q.8

The 15 parts of the given figure are to be painted such that no two adjacent parts with shared boundaries (excluding corners) have the same color. The minimum number of colors required is



Options

- A** 5
- B** 6
- C** 4
- D** 3

Question Type : MCQ

Question ID : 6420084493

Status : Answered

Chosen Option :

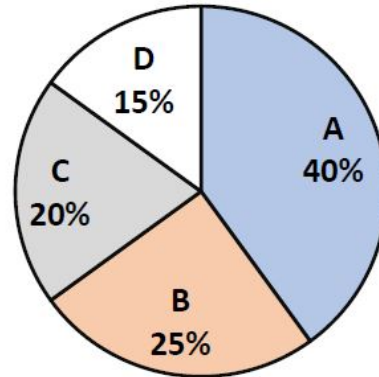
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Q.9

In an election, the share of valid votes received by the four candidates A, B, C, and D is represented by the pie chart shown. The total number of votes cast in the election were 1,15,000, out of which 5,000 were invalid.

B

Share of valid votes



Based on the data provided, the total number of valid votes received by the candidates B and C is

Options

- A. 51,750
- B. 49,500
- C. 54,000
- D. 45,000

Question Type : MCQ

Question ID : 6420084496

Status : Answered

Chosen Option :



Q.10

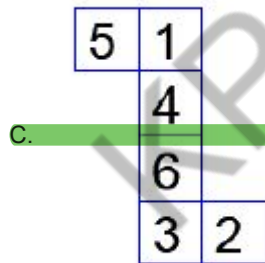
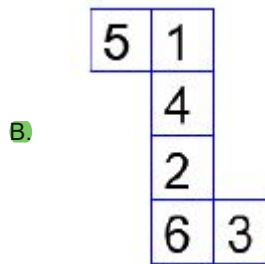
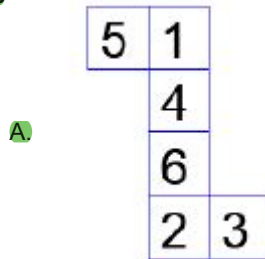
Three different views of a dice are shown in the figure below.

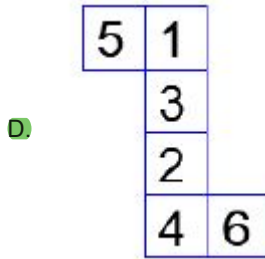


A

The piece of paper that can be folded to make this dice is

Options





Question Type : MCQ
Question ID : 6420084500
Status : Answered
Chosen Option :

Section : A: Common

Q.1

India's intended *Nationally Determined Contribution* to the United Nations Framework Convention on Climate Change in 2022 include(s)

A, C

Options A.

reduction of emissions intensity of India's GDP by 45% by 2030 from 2005 level

B. achieving the target of net-zero emission by 2030

C.

achieving about 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030

D.

reduction of total projected carbon emission by one billion tonnes from 2022 to 2025

Question Type : MSQ
Question ID : 6420084515
Status : Answered



Q.2

The author of the book *Human Aspects of Urban Form* is

A

Options

- A. Amos Rapoport
- B. Peter Katz
- C. Cliff Moughtin
- D. Lewis Mumford

Question Type : MCQ

Question ID : 6420084507

Status : Not Answered

Chosen Option :

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Q.3

As per the *Ekistics Logarithmic Scale*, the 'world city' is referred as

D

Options

- A. Megalopolis
- B. Conurbation
- C. Acropolis
- D. Ecumenopolis

Question Type : MCQ

Question ID : 6420084503

Status : Answered

Chosen Option :

Q.4

Which of the following is/are used for *municipal fiscal resource mobilisation*?

A, B

Options

- A. Property tax
- B. Development charges
- C. Salary of municipal staff
- D. Income tax

Question Type : MSQ

Question ID : 6420084518

Status : Answered

Chosen Option :



Q.5

Which of the following is/are associated with *Gentrification* in a neighbourhood?

B, D

Options

- A. Poor households displace wealthier households
- B. Wealthier households displace poor households
- C. Real estate value decreases
- D. Real estate value increases

Question Type : **MSQ**

Question ID : **6420084512**

Status : **Answered**

Chosen Option :

KP GATE CLASSES



Q.6

In *Mānasāra Silpasāstra*, a bow-shaped town plan is known as

Options

- A *Prastara*
- B *Dandaka*
- C *Nandyāvarta*
- D *Kārmuka*

D

Question Type : MCQ

Question ID : 6420084504

Status : Not Answered

Chosen Option :

KP GATE CLASSES



Q.7 The value of a property when sold at a *lower price* than its open market price is called

Options

- A. Replacement Value
- B. Distress Value
- C. Accommodation Value
- D. Speculative Value

B

Question Type : MCQ

Question ID : 6420084505

Status : Answered

Chosen Option :

KP GATE CLASSES



Q.8

Which of the following statements is correct for an *oxidation pond* to treat waste water?

A

Options

A It is an aerobic pond.

B

It does not remove Biological Oxygen Demand (BOD).

C It does not require sunlight.

D It is an anaerobic pond.

Question Type : MCQ

Question ID : 6420084509

Status : Answered

Chosen Option :

KP GATE CLASSES



Q.9

Which of the following sites is/are included in the *UNESCO World Heritage List* as on December 2022?

Options

- A** Capitol Complex, Chandigarh
- B** Keoladeo National Park, Bharatpur
- C** Moth ki Masjid, Delhi
- D** Paradesi Synagogue, Kochi

A, B

Question Type : MSQ

Question ID : 6420084513

Status : Answered

Chosen Option :

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Q.10

Which of the following is/are under the purview of the *Energy Conservation Building Code of India 2017*?

A, B

Options

- A. Plug Loads
- B. Indoor Lighting
- C. Outdoor Lighting
- D. Embodied Energy

Question Type : MSQ

Question ID : 6420084517

Status : Answered

Chosen Option :

Q.11

A ramp with a slope of 1:12 is required for wheelchair access. Intermediate landings of length 1.5 m each have to be provided after every 9 m running length. The *running length* of a straight ramp including landing, to negotiate a level difference of 900 mm vertical height, in m, is _____ (rounded off to two decimal places).

12.25 to 12.35

Given

Answer:

Question Type : NAT

Question ID : 6420084519

Status : Answered



Q.12

As per the Census of India 2011, *non-notified slums* is/are categorised as

Options

- A. Unrecognised
- B. Authorised
- C. Identified
- D. Recognised

C, D

Question Type : **MSQ**

Question ID : **6420084516**

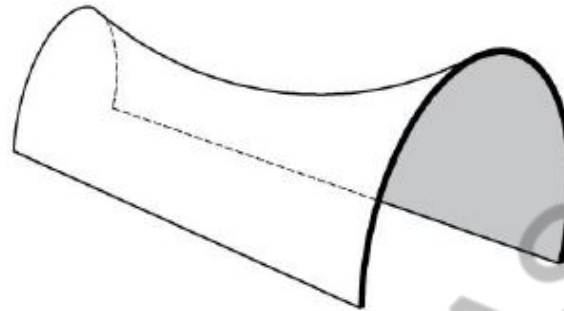
Status : **Answered**

Chosen Option :

KP GATE CLASSES

Q.13

The nature of curvature of the following *structural form* is



Options

- A möbius
- B anticlastic
- C monoclastic
- D synclastic

Question Type : MCQ

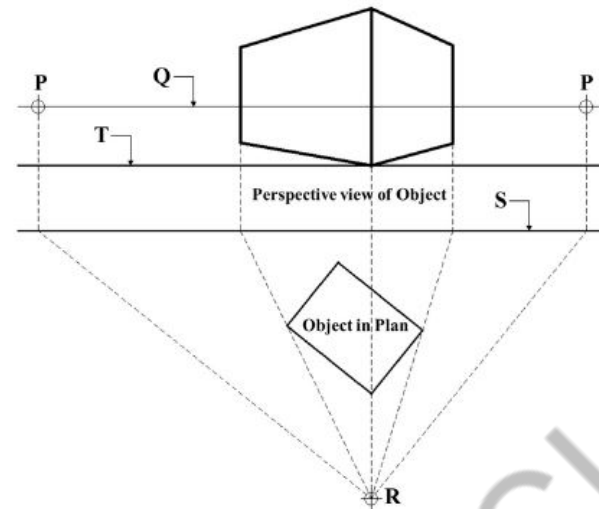
Question ID : 6420084502

Status : Not Answered

Chosen Option : --

Q.14 The reference points, lines and planes for drawing a two-point perspective of an object are marked in the Figure below. Select the correct option(s) that match(es) with the corresponding nomenclature.

A, D



Options

- A. R – Station point, S – Picture plane
- B. R – Vanishing point, T – Picture plane
- C. Q – Ground line, S – Horizon line
- D. P – Vanishing point, T – Ground line

Question Type : MSQ

Question ID : 6420084514

Status : Answered

Chosen Option :



Q.15

The conservation architect of the *Maitreya Buddha Temple* at *Basgo, Ladakh* which won the 2007 UNESCO Asia-Pacific Heritage Award is

Options

- A** Rahul Mehrotra
- B** Saima Iqbal
- C** Abha Narain Lambah
- D** Vinod Kumar M. M.

C

Question Type : **MCQ**

Question ID : **6420084510**

Status : **Not Answered**

Chosen Option :

KP GATE CLASSES



Q.16

In a traffic survey, *Enoscope* is used to measure

Options

- A. Volume to Capacity ratio
- B. Intersection delay
- C. Spot speed
- D. Sight distance

Question Type : MCQ

Question ID : 6420084506

Status : Not Answered

Chosen Option .



Q.17

Which of the following statements is correct for Urban Cool Island (UCI)?

B

Options A

The UCI and Urban Heat Island (UHI) cannot happen in a city at the same time.

B

Air temperature of surrounding rural areas is warmer than that of the urban areas.

C UCI happens only in a snow-clad mountain.

D

Air temperature of surrounding rural areas is cooler than that of the urban areas.

Question Type : MCQ

Question ID : 6420084508

Status : Answered

Chosen Option :

KP GATE CLASSES



Q.18

Which of the following options is/are the right sequence(s) in *water treatment process*?

A, B

Options

- A) Coagulation → Flocculation → Sedimentation
- B) Sedimentation → Filtration → Disinfection
- C) Disinfection → Filtration → Flocculation
- D) Sedimentation → Flocculation → Coagulation

Question Type : MSQ

Question ID : 6420084511

Status : Answered

Chosen Option :

KP GATE CLASSES

Q.19 Match the *Biosphere Reserves* in **Group-I** with their corresponding *features* in **Group-II**.

Group-I		Group-II	
(P)	Gulf of Mannar	(1)	Ridge, Glacier
(Q)	Sunderbans	(2)	Sub-tropical/Tropical Forest, Stepped Hill
(R)	Nanda Devi	(3)	Swamp forest, Mangrove
(S)	Nilgiri	(4)	Coral Reefs, Seagrass bed
		(5)	Salt Marsh, Flat Terrain

Options

- A** P – 4, Q – 2, R – 3, S – 5
- B** P – 3, Q – 5, R – 1, S – 2
- C** P – 1, Q – 3, R – 4, S – 5
- D** P – 4, Q – 3, R – 1, S – 2

Question Type : MCQ

Question ID : 6420084524

Status : Answered

Chosen Option :



Q.20

A real estate developer is developing a township on a PPP mode. The total area of the site is 2.672 hectares with an allowable FAR of 2.25, of which 20% is earmarked for MIG category. The gross area of each MIG unit including common areas and services is 72 m². Assuming super built up area to be same as FAR, the *maximum number of MIG apartments* that can be constructed is _____ (*in integer*).

167

Given

Answer:

Question Type : NAT

Question ID : 6420084539

Status : Answered

KP GATE CLASSES

Q.21 A declining Industrial Town has proposed to improve water sustainability by reducing stormwater runoff through change of land use land cover (LULC), as shown in the Table below, to attract new residents.

1.34

LULC	Runoff Coefficient	Existing Area in hectare	Proposed Area in hectare
Industrial	0.7	1500	800
Residential	0.5	1000	1200
Park and Playgrounds	0.25	1200	1000
Forest	0.15	300	1000

Considering a flat topography and zero additional runoff from the adjoining areas, the *reduction in run-off generation* for a 400 mm rainfall event in the industrial town for the proposed intervention, in cubic meters, is _____ $\times 10^6$ (rounded off to two decimal places).

Given

Answer:

Question Type : NAT

Question ID : 6420084538

Status : Answered

Q.22

Match the following *concepts* in **Group-I** with their corresponding *description* in **Group-II**.

Group-I		Group-II	
(P)	NIMBY	(1)	Affording a clear view of the waterfront to a plot through the abutting street
(Q)	Form based code	(2)	Planning and zoning tool to regulate development primarily through urban form
(R)	Tactical urbanism	(3)	Establishment of residential areas on the outskirts of a city
(S)	Suburbanisation	(4)	Short-term, low cost, scalable interventions and policies to change a neighbourhood
		(5)	Resisting any physical intervention by public or private enterprises within their neighbourhood

Options

- A. P – 1, Q – 5, R – 4, S – 3
- B. P – 5, Q – 2, R – 4, S – 3
- C. P – 5, Q – 4, R – 3, S – 2
- D. P – 1, Q – 2, R – 4, S – 5

Question Type : MCQ

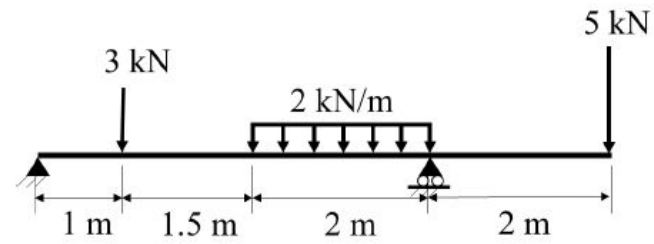
Question ID : 6420084522

Status : Answered

Chosen Option :

Q.23 For the beam shown below, ignoring the self-weight, the maximum hogging moment (in kN·m) generated for the loads indicated is _____ (rounded off to one decimal place).

10



Given →
Answer:

Question Type : NAT

Question ID : 6420084534

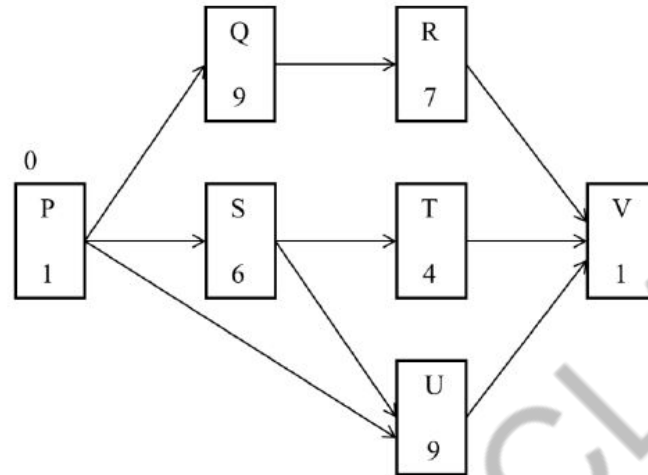
Status : Not Answered



Q.24

The network diagram of a construction project is shown in the following Figure. The duration of each activity, in days, and the early start time of the project are denoted in the diagram. The *total project duration* along the critical path, in days, is _____ (in integer).

18



Given
Answer:

Question Type : NAT
Question ID : 6420084536
Status : Answered

KP GATE CLASSES

Q.25

Match the *features* in **Group-I** with the corresponding *software tools* in **Group-II**.

Group-I		Group-II	
(P)	Raster Graphics Editing	(1)	OpenStudio
(Q)	Energy Modeling	(2)	GIMP
(R)	Visual Programming Interface	(3)	STAAD
(S)	Structural Analysis	(4)	Grasshopper
		(5)	Radiance

Options

- A** P – 2, Q – 5, R – 1, S – 3
- B** P – 2, Q – 1, R – 4, S – 3
- C** P – 1, Q – 4, R – 5, S – 2
- D** P – 3, Q – 1, R – 2, S – 5

Question Type : MCQ

Question ID : 6420084520

Status : Answered

Chosen Option :

B

Q.26

Which of the following statements is/are correct?

Options A

B, C, D

The fruit of the Kadam/cadamba tree (*Neolamarckia cadamba*) is conical in shape and poisonous for humans.

B.

Frangipani, champa, and *plumeria alba* are names of the same flowering tree.

C.

Hibiscus or china rose (*Hibiscus rosa-sinensis*) is a shrub which has red, pink, white, and yellow blossoms.

D.

Jacaranda (*Jacarenda mimosifolia*), gulmohar (*delonix regia*), and amaltas (*laburnum*) are flowering trees.

Question Type : MSQ

Question ID : 6420084531

Status : Answered

Chosen Option :

Q.27 As per the URDPFI Guidelines 2015, match the *type of educational facilities* in **Group-I** with the corresponding *minimum population to be served per facility* in **Group-II**.

Group-I		Group-II	
(P)	Integrated school	(1)	4,000
(Q)	Senior secondary school	(2)	2,500
(R)	College	(3)	90,000
(S)	Primary school	(4)	1,25,000
		(5)	7,500

Options

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

Question Type : MCQ

Question ID : 6420084527

Status : Answered

Chosen Option :

D



Q.28

At present, the cost of a new office equipment is 50,000 (in Indian Rupees). It has 15% salvage value after a useful life of 5 years. Using *straight line method of depreciation*, the *book value* of the equipment 3 years from now, in Indian Rupees, will be _____ (*in integer*).

24,500

Give

Answer :

Question Type : NAT

Question ID : 6420084535

Status : Answered

Q.29

Which of the following is/are component(s) of *Right of Way (RoW)* of a road?

Options

A Kerb

B Building line

C Carriageway

D Sidewalk

A, C, D

Question Type : MSQ

Question ID : 6420084532

Status : Answered

Chosen Option

Q.30 Match the *terminologies* in **Group-I** with their *descriptions* in **Group-II**.

Group-I		Group-II	
(P)	Edge City	(1)	Rapid expansion of geographical areas of towns or cities
(Q)	Synekism	(2)	Violence against the city
(R)	Urbicide	(3)	A secondary CBD on the edge of the city
(S)	Urban Sprawl	(4)	Rebuilding core city area
		(5)	Union of several small urban settlements under one rule

Options

- A** P – 3, Q – 4, R – 2, S – 5
- B** P – 2, Q – 5, R – 3, S – 1
- C** P – 4, Q – 2, R – 3, S – 1
- D** P – 3, Q – 5, R – 2, S – 1

Question Type : MCQ

Question ID : 6420084525

Status : Answered

Chosen Option :

D

Q.31

The design of a 1200 capacity concert hall considers $\frac{1}{3}$ rd female audience and $\frac{2}{3}$ rd male audience. The Table below shows the guideline for calculating Water Closet requirements.

16

Fixture	Male	Female
Water closet	1 number per 100 up to 400 and over 400, 1 number for every 250 or part thereof	3 numbers per 100 up to 200 population and over 200, 2 numbers for every 100 or part thereof

Using the above guideline, the number of *Water Closets* required for the total audience is _____ (*in integer*).

Given

Answer :

Question Type : NAT

Question ID : 6420084537

Status : Answered

Q.32 Match the *urban renewal projects* in **Group-I** with the corresponding *cities* in **Group-II**.

Group-I		Group-II	
(P)	Cheonggyecheon	(1)	New York
(Q)	The High Line	(2)	London
(R)	False Creek South	(3)	Seoul
(S)	Canary Wharf	(4)	Vancouver
		(5)	Tokyo

Options

- A** P – 2, Q – 5, R – 4, S – 3
- B** P – 3, Q – 5, R – 1, S – 2
- C** P – 3, Q – 1, R – 4, S – 2
- D** P – 5, Q – 1, R – 2, S – 3

Question Type : **MCQ**

Question ID : **6420084523**

Status : **Not Answered**

Chosen Option :

Q.33 Match the *items* in **Group-I** with their corresponding *items* in **Group-II**.

Group-I		Group-II	
(P)	Floating floor	(1)	Overflow control
(Q)	Float valve	(2)	Delay not affecting a project
(R)	Metal float	(3)	Acoustical buffer
(S)	Free float	(4)	Plastering equipment
		(5)	Traffic flow control

Options

- A** P – 3, Q – 1, R – 4, S – 2
- B** P – 3, Q – 2, R – 4, S – 1
- C** P – 5, Q – 1, R – 3, S – 4
- D** P – 1, Q – 2, R – 5, S – 4

Question Type : MCQ

Question ID : 6420084526

Status : Answered

Chosen Option :

Q.34

A municipal town requires a volume of 70,000 m³ compacted solid waste to fill a low lying land. The city has a total of 10,000 households.

Type of House	Percentage of Households	Equivalent volume of compacted solid waste generated/ household/ day
LIG	30%	0.10 m ³
MIG	60%	0.15 m ³
HIG	10%	0.20 m ³

50

Using the information as shown in the Table above, the estimated minimum number of days required to fill the low lying land is _____ (*in integer*).

Given**Answer :****Question Type : NAT****Question ID : 6420084540****Status : Answered**

Q.35

Which of the following statements is/are correct?

A, B, D

Options

- A The Royal Botanical Garden is in Kew, England.
- B The Villa d'Este is in Tivoli, Italy.
- C Shinjuku Gyoen National Garden is in Beijing, China.
- D
Indira Gandhi Memorial Tulip Garden is in Srinagar, J&K, India.

Question Type : MSQ

Question ID : 6420084530

Status : Answered

Chosen Option :

KP GATE CLASSES



Q.36

Which of the following statements is/are true?

Options A

Physiological Equivalent Temperature is used in outdoor thermal comfort evaluation.

B

Reynolds number greater than 4000 refers to turbulent wind flow.

C

Thermal Performance Index is computed using outside surface temperature of building envelope.

D

Reynolds number less than 2000 refers to laminar wind flow.

B, C, D

Question Type : MSQ

Question ID : 6420084528

Status : Answered

Chosen Option :

KP GATE CLASSES



Q.37 As per the National Building Code of India 2016, terminologies associated with *fire fighting* in a building is/are

Options

- A. Water sprinkler system
- B. Atrium
- C. Refuge area
- D. Panic bar

A, C, D

Question Type : **MSQ**

Question ID : **6420084533**

Status : **Answered**

Chosen Option :

KP GATE CLASSES



Q.38

Which of the following statements is/are correct?

Options

- A** CMYK is a subtractive colour system. A, B, D
- B** Blue, green, orange and red are tetrad combinations.
- C** Orange, green and violet are analogous combinations.
- D** Yellow, blue-violet and red-violet are split complementary hues.

Question Type : **MSQ**

Question ID : **6420084529**

Status : **Answered**

Chosen Option :

KP GATE CLASSES

Q.39

Match the *elements* in **Group-I** with the corresponding *buildings* in **Group-II**.

Group-I		Group-II	
(P)	Lightweight Structure	(1)	Taipei 101, Taipei by Lee and Wang
(Q)	Base Isolator	(2)	The Gherkin, London by Foster & Partners
(R)	Tuned-mass Damper	(3)	Museum of New Zealand Te Papa Tongarewa, Wellington by Ivan Mercep
(S)	Diagrid	(4)	Paper Log Houses, Kobe by Shigeru Ban
		(5)	Metropolitan Cathedral of Christ the King, Liverpool by Lutyens and Gibberd

Options

- A. P – 1, Q – 3, R – 5, S – 4
- B. P – 4, Q – 1, R – 5, S – 2
- C. P – 3, Q – 2, R – 1, S – 5
- D. P – 4, Q – 3, R – 1, S – 2

Question Type : MCQ

Question ID : 6420084521

Status : Not Answered

Chosen Option :

D



Section : B1: Architecture

Q.1 Polytetrafluoroethylene (PTFE) coated fiberglass has been used as a roofing membrane in

Options

- A** Eden Gardens Stadium, Kolkata
- B** Melbourne Cricket Ground Stadium, Melbourne
- C** Beijing National Stadium, Beijing
- D** Jawaharlal Nehru Stadium, New Delhi

A, B, D

Question Type : MSQ

Question ID : 6420084546

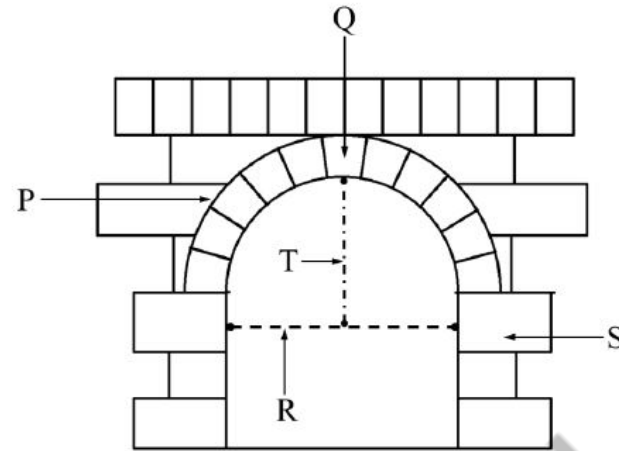
Status : Answered

Chosen Option :

KP GATE CLASSES

Q.2

With reference to the Figure below, which of the following labelling is/are correct?



A, D

Options

- A** Q – Key, S – Abutment, T – Rise
- B** Q – Key, S – Span, T – Extrados
- C** P – Abutment, R – Rise, T – Extrados
- D** P – Extrados, Q – Key, R – Span

Question Type : MSQ

Question ID : 6420084544

Status : Answered

Chosen Option :



Q.3

Which of the following buildings has/have *pendentives* as a structural element?

A, C, D

Options

- A** Westminster Cathedral, London, UK
- B** Dilwara Temple, Mount Abu, India
- C** Hagia Irene Museum and Concert Hall, Istanbul
- D** St. Mark's Basilica, Venice, Italy

Question Type : MSQ

Question ID : 6420084545

Status : Answered

Chosen Option

KP GATE CLASSES



Q.4

Titan Integrity Campus, Bengaluru is designed by

A

Options

- A Sanjay Mohe
- B Anant Rajee
- C Raj Rewal
- D Christopher C. Benninger

Question Type : MCQ

Question ID : 6420084543

Status : Not Answered

Chosen Option :

KP GATE CLASSES



Q.5

Rose window is a characteristic feature of

Options

- A** Humayun Tomb, Nizamuddin, Delhi
- B** Notre-Dame, Paris, France
- C** Great Temple of Ammon, Karnak, Egypt
- D** Temple of Jupiter, Baalbek, Lebanon

B

Question Type : MCQ

Question ID : 6420084541

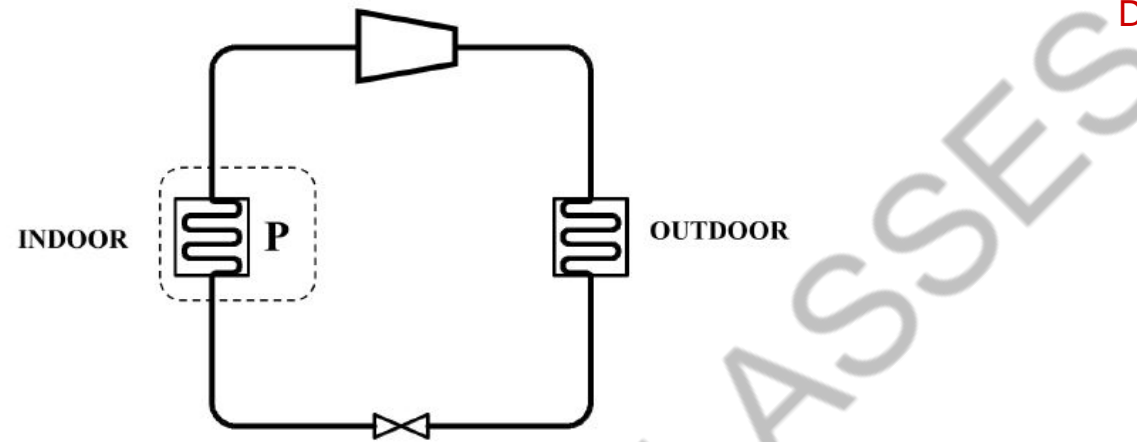
Status : Answered

Chosen Option :

KP GATE CLASSES

Q.6

The schematic diagram of a unitary air-conditioner operating in cooling mode, is shown in the following Figure. The component **P** marked in the figure represents



Options

- A Expansion valve
- B Compressor
- C Condenser
- D Evaporator

Question Type : MCQ

Question ID : 6420084542

Status : Answered

Chosen Option :

Q.7

A non-stop express elevator directly connects the observatory level at 80th floor of a tower with the podium at 2nd floor level. The tower has a uniform floor-floor height of 4 m. The elevator attains a maximum speed of 8 m/s. Assume 2 m/s² as net vertical acceleration and net vertical deceleration (incorporating gravity). If the elevator starts from a state of rest from the podium, the time taken to reach the observatory, in seconds, is _____ (rounded off to one decimal place).

41

Giver:

Answer:

Question Type : NAT

Question ID : 6420084547

Status : Answered

Q.8

Which of the following statements is/are correct?

A, C, D

Options

A) *Bhunga* has a circular plan.

B)

Ikra is a two-storeyed house with stone masonry and a flat-roof.

C) *Nalukettu* houses have a courtyard.

D)

Kath-kuni construction comprises layers of stone and timber.

Question Type : MSQ

Question ID : 6420084552

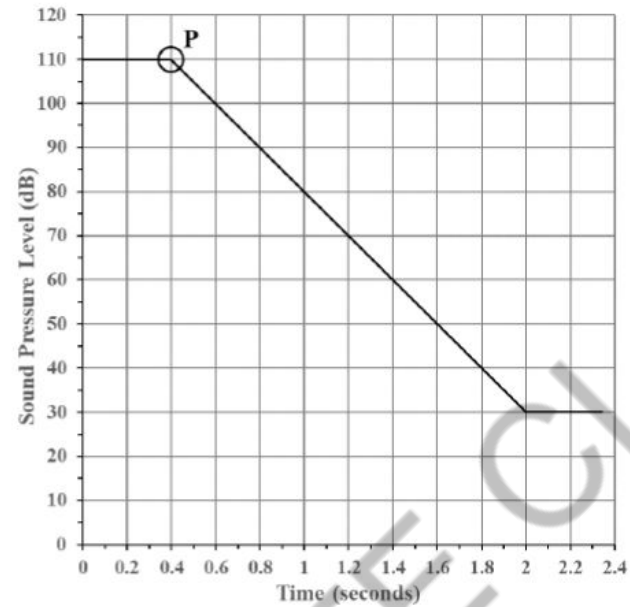
Status : Answered

Chosen Option :

Q.9

The decay of sound in an enclosed lecture hall of volume 3500 m^3 is shown in the Figure below. The sound source is switched off at point P. Using the *Reverberation Time* (RT_{60}) obtained from the figure, the calculated total sound absorption of the hall, in Sabins, is _____ (rounded off to the nearest integer).

467



Given --

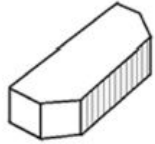
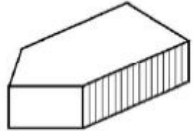
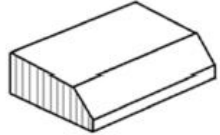
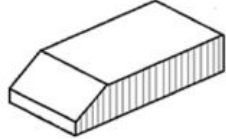
Answer:

Question Type : NAT

Question ID : 6420084555

Status : Not Answered

Q.10 Match the *specialty shaped bricks* in **Group-I** with their corresponding *nomenclature* in **Group-II**.

Group-I		Group-II	
(P)		(1)	Plinth Header
(Q)		(2)	Bird's mouth
(R)		(3)	Squint
(S)		(4)	Double cant
		(5)	Plinth stretcher

Options

- A.** P-4, Q-3, R-5, S-1
- B.** P-3, Q-2, R-4, S-1
- C.** P-4, Q-3, R-5, S-2
- D.** P-4, Q-1, R-2, S-5



Status : Not Answered

Chosen Option :

Q.11

A 2 TR window air-conditioner of Energy Efficiency Ratio (EER) 3.1 is catering to a room of volume 40 m^3 . The air-conditioner is operational for 600 hours during summer on cooling mode. The compressor is also operational for the complete duration. The total energy consumption of the air-conditioner during the above mentioned period, in kWh, is _____ (*rounded off to nearest integer*).

1355

Given --

Answer :

Question Type : NAT

Question ID : 6420084556

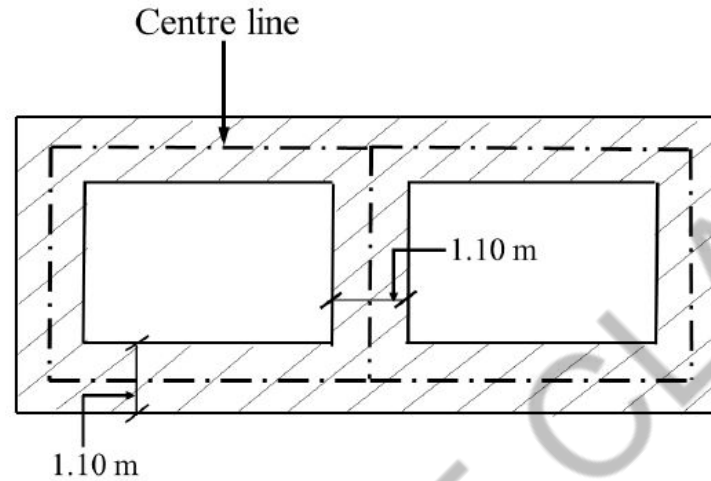
Status : Not Answered

KP GATE CLASSES

Q.12

The following Figure shows the excavation plan of a two room structure, where the trench has a uniform width of 1.10 meters. If the cumulative centre line length of the trench is 41.10 meters and the required depth of concrete to be poured is 0.30 meters, the volume of concrete in foundation, in cubic meters, will be _____ (rounded off to two decimal places).

13.56



Given

Answer :

Question Type : NAT

Question ID : 6420084554

Status : Answered

Q.13

Match the *elements* in **Group-I** with the corresponding *religious buildings* in **Group-II**.

Group-I		Group-II	
(P)	Bell capital	(1)	Mosque
(Q)	<i>Mehrab</i>	(2)	Hindu Temple
(R)	<i>Gopuram</i>	(3)	Greek Temple
(S)	Pediment	(4)	Romanesque Church
		(5)	Egyptian Temple

Options

- A** P – 5, Q – 4, R – 3, S – 2
- B** P – 3, Q – 1, R – 5, S – 4
- C** P – 4, Q – 1, R – 2, S – 3
- D** P – 5, Q – 1, R – 2, S – 3

Question Type : MCQ

Question ID : 6420084548

Status : Answered

Chosen Option :

D

Q.14

Match the *museums* in **Group-I** with their *architects* in **Group-II**.

A

Group-I		Group-II	
(P)	Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal	(1)	Charles Correa
(Q)	Bihar Museum, Patna	(2)	Ram Sharma
(R)	Gandhi Memorial Museum, Ahmedabad	(3)	Romi Khosla
(S)	Museum of Art and Photography, Bengaluru	(4)	Soumitro Ghosh & Nisha Mathew
		(5)	Fumihiko Maki

Options

- A** P – 2, Q – 5, R – 1, S – 4
- B** P – 2, Q – 3, R – 1, S – 4
- C** P – 4, Q – 5, R – 3, S – 1
- D** P – 4, Q – 3, R – 1, S – 2

Question Type : **MCQ**

Question ID : **6420084549**

Status : **Answered**

Chosen Option :



Q.15

Which of the following statements is/are correct?

Options

- A The unit of Lighting Power Density is cd/m^2 .
- B The unit of Lighting Power Density is W/m^2 .
- C The unit of Sound Power is W.
- D The unit of Energy Performance Index is $\text{kWh}/\text{m}^2/\text{year}$.

B, C, D

Question Type : **MSQ**

Question ID : **6420084551**

Status : **Answered**

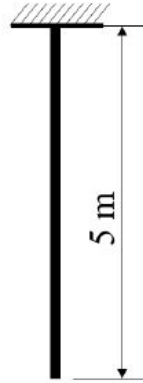
Chosen Option :

KP GATE CLASSES

Q.16

A 5 m long Aluminium tie rod of cross-section $0.20 \text{ m} \times 0.04 \text{ m}$ is subjected to a tensile force induced by its self-weight of 21.20 kg/m considering gravitational acceleration of 10 m/s^2 . If tensile Young's modulus of Aluminium is $70,000 \text{ MPa}$, the maximum tensile strain in the rod is _____ $\times 10^{-6}$ (rounded off to two decimal places).

1.89



Given

Answer:

Question Type : NAT

Question ID : 6420084553

Status : Answered

Section : B2: Planning



Q.1

In 2021, a city survey report revealed a sex ratio of 930 with an estimated increase of 2.16% over the next 20 years. In 2041, the total population of the city is projected to be 15,00,000. The estimated female population in the year 2041 will be _____ (*in integer*).

7,30,804

Given --
Answer:

Question Type : NAT
Question ID : 6420084563
Status : Not Answered

Q.2

Which of the following statements correctly represent(s) the *Demographic dividend* of a country?

B, C

Options A.

Demographic dividend can never lead to demographic disaster.

B. Demographic dividend demands more job creation.

C.

Share of working age population is larger than dependent population.

D.

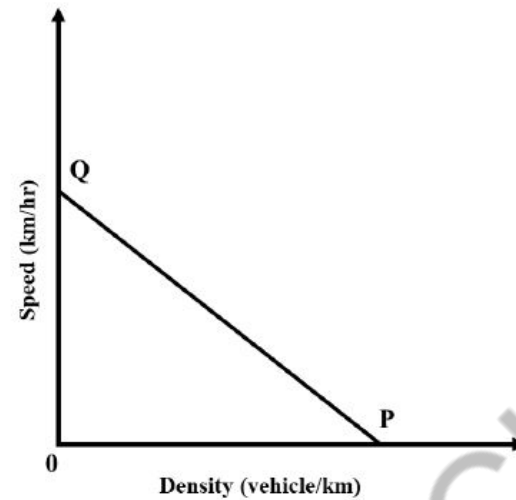
Share of working age population is lesser than dependent population.

Question Type : MSQ
Question ID : 6420084561
Status : Not Answered
Chosen Option : --

Q.3

With reference to the *Speed-Density* diagram given below, which of the following statements is/are correct?

A, C



Options

- A. Point **P** represents Jam Density
- B. Point **P** represents Maximum Flow
- C. Point **Q** represents Space Mean Speed for Free Flow condition
- D. Point **Q** represents Time Mean Speed

Question Type : MSQ

Question ID : 6420084560

Status : Not Answered

Chosen Option : --



Q.4 Which of the following initiatives of the Government of India is also known as the *National Master Plan for Multi-modal Connectivity*?

D

Options

- A** Bharatmala
- B** Parvatmala
- C** Sagarmala
- D** PM Gati Shakti

Question Type : MCQ

Question ID : 6420084559

Status : Not Answered

Chosen Option : --

KP GATE CLASSES



Q.5

Mass Rapid Transit System is a

B

Options

- A Flexible Route and Flexible Schedule service.
- B Fixed Route and Fixed Schedule service.
- C Fixed Route and Flexible Schedule service.
- D Flexible Route and Fixed Schedule service.

Question Type : MCQ

Question ID : 6420084558

Status : Not Answered

Chosen Option : --

KP GATE CLASSES



Q.6 As per the URDPFI Guidelines 2015, choose the option(s) which indicate(s) the appropriate hierarchy of plans from higher to lower order.

A, B

Options A

Development Plan > Special Purpose Plan > Annual Plan

B

Perspective Plan > Development Plan > Local Area Plan

C Local Area Plan > Development Plan > Annual Plan

D

Special Purpose Plan > Perspective Plan > Local Area Plan

Question Type : **MSQ**

Question ID : **6420084562**

Status : **Not Answered**

Chosen Option : --

KP GATE CLASSES



Q.7

Which of the following aims is set under the SVAMITVA scheme of the Ministry of Panchayati Raj, Government of India?

B

Options A:

Provide tap water connection to all households in rural areas.

B:

Establish clear ownership of property in rural inhabited (*Abadi*) areas, by mapping of land parcels using improvised technology.

C:

Provide effective and efficient institutional platforms to enable the rural poor to increase their household income by means of sustainable livelihood enhancement.

D:

Provide 'right to work' to the rural people falling Below Poverty Line.

Question Type : MCQ

Question ID : 6420084557

Status : Not Answered

Chosen Option : --

Q.8

A city with a present population of 1,75,000 is expecting an annual population growth rate of 0.85%. In a traffic assessment study, the *trip generation* model has been developed as $Y = 142 + 0.675X$, where Y is the number of daily trips generated within the city and X is the population of the city. The *number of daily trips* to be generated within the city after 10 years is _____ (in integer).

1,28,701

Given --

Answer:

Question Type : NAT

Question ID : 6420084572

Status : Not Answered



Q.9

Which of the following methods is/are used in traffic survey to measure the *Running Speed* and *Journey Speed*?

C, D

Options

- A** Hardy Cross Method
- B** Elevated Observer Method
- C** Registration Number Method
- D** Moving Observer Method

Question Type : MSQ

Question ID : 6420084567

Status : Not Answered

Chosen Option : --

KP GATE CLASSES

Q.10 Match the *terms* in **Group-I** with their *descriptions* in **Group-II**.

Group-I		Group-II	
(P)	Landfill site	(1)	Development on previously developed site
(Q)	Greenfield development	(2)	Land to dispose solid waste
(R)	Green Belt	(3)	Development on previously undeveloped land
(S)	Brownfield development	(4)	Policy to protect livestock
		(5)	A buffer to control urban development

Options

- A** P – 2, Q – 3, R – 5, S – 1
- B** P – 3, Q – 5, R – 2, S – 1
- C** P – 3, Q – 4, R – 5, S – 2
- D** P – 2, Q – 3, R – 1, S – 4

Question Type : MCQ

Question ID : 6420084564

Status : Not Answered

Chosen Option : --



Q.11

The demand of a EcoCity theme park is estimated as $P = 1500 - 7.5Q$, where P (in Indian Rupees) is the price of a ticket for single entry, and Q (in integer) is the number of tickets sold per hour. The *maximum revenue* per hour along the demand curve, in Indian Rupees, is _____ (*in integer*).

75,000

Given --

Answer:

Question Type : NAT

Question ID : 6420084570

Status : Not Answered

KP GATE CLASSES

Q.12 Match the following *planning theories/concepts* in **Group-I** with their corresponding *proponents* in **Group-II**.

Group-I		Group-II	
(P)	Valley Section	(1)	McGee and Gemburg
(Q)	Third Place Theory	(2)	Oscar Newman
(R)	Defensible Space	(3)	Ray Oldenberg
(S)	Desakota Model	(4)	Patrick Geddes
		(5)	C. A. Doxiadis

Options

- A** P – 2, Q – 4, R – 1, S – 5
- B** P – 4, Q – 2, R – 3, S – 1
- C** P – 4, Q – 3, R – 2, S – 1
- D** P – 1, Q – 3, R – 5, S – 2

Question Type : **MCQ**

Question ID : **6420084566**

Status : **Not Answered**

Chosen Option : --



Q.13

In a *one-way single lane* traffic stream, the observed average time headway is 2.5 seconds. The *traffic flow* of the above mentioned lane, in vehicle/hr, is _____ (*in integer*).

1441

Given --

Answer :

Question Type : NAT

Question ID : 6420084569

Status : Not Answered

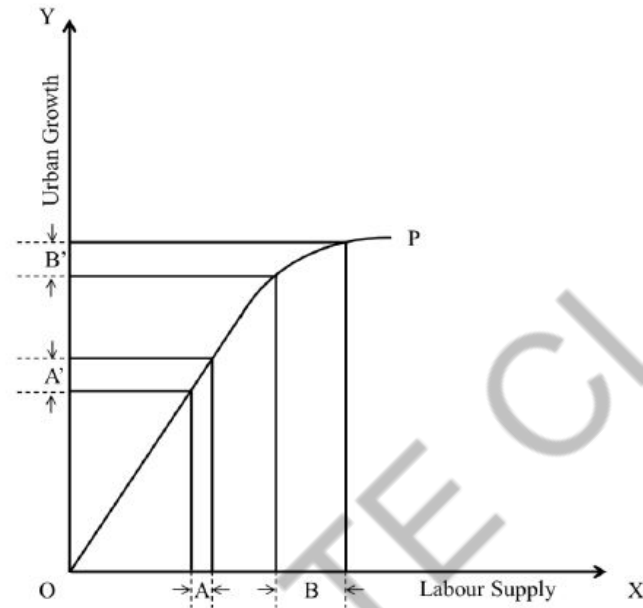
KP GATE CLASSES

Q.14

Labour supply and urban growth are represented in X and Y axis of the Figure below. Curve OP represents the relationship between labour supply and urban growth. The ratios $A:A'$ and $B:B'$ are 1:1.2 and 3:1.2, respectively.

If 6 units of labour is supplied in B, then the number of units of urban growth in B' will be _____ (rounded off to one decimal place).

2.4



Given --

Answer :

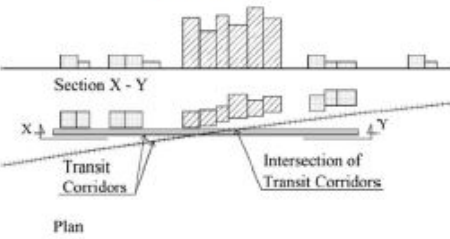
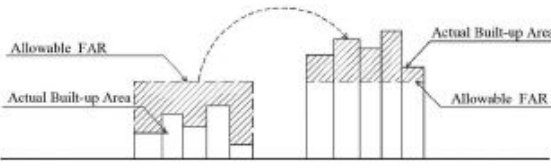

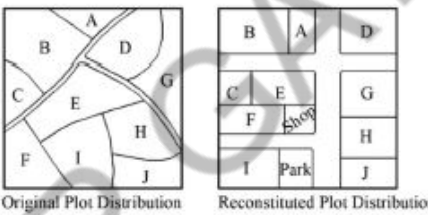
Question Type : NAT

Question ID : 6420084571

Status : Not Answered



Q.15 Match the following *illustrations* in **Group-I** with their corresponding *concepts* in **Group-II**.

Group-I	Group-II
<p>(P)</p> 	<p>(1) Figure Ground Relationship</p>
<p>(Q)</p> 	<p>(2) Town Planning Scheme (TPS)</p>
<p>(R)</p> 	<p>(3) Transit Oriented Development (TOD)</p>
<p>(S)</p> 	<p>(4) Transferable Development Rights (TDR)</p>
	<p>(5) Cul-de-Sac</p>

Options
A. P-2, Q-4, R-1, S-5

B. P-3, Q-4, R-1, S-2

B



- C P-1, Q-3, R-4, S-2
- D P-3, Q-5, R-2, S-4

Question Type : MCQ
Question ID : 6420084565
Status : Not Answered
Chosen Option : --

Q.16 In the context of regional planning, which of the following terms represent(s) a region?

B, D

Options

- A Isometric
- B Functional
- C Planning
- D Formal

Question Type : MSQ
Question ID : 6420084568
Status : Not Answered
Chosen Option : --

KPD GATE CLASSES