



UPSC Deputy Architect 2024 Preliminary Answer Key

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1. What are the relational properties of forms that govern the pattern and composition of elements?

(a) Shape, visual inertia, colour

(b) Position, orientation, visual inertia

(c) Size, orientation, position

(d) Texture, visual inertia, colour

2. Transformations of the primary solids are generated by

(a) structural transformation, dimensional transformation, fluid transformation

(b) pressure transformation, subtractive transformation, structural transformation

(c) dimensional transformation, subtractive transformation, additive transformation

(d) fluid transformation, dimensional transformation, additive transformation

3. Consider the following statements with respect to oblique approach :

1. The path can be redirected one or more times to delay and prolong the sequence of the approach.

2. It leads directly to the entrance of a building along a straight axial path.

3. The path prolongs the sequence of the approach and emphasizes the three-dimensional form of a building as we move around its perimeter.

Which of the above statements is/are correct?

(a) 1 only

(b) 2 only

(c) 3 only

(d) 1, 2 and 3

4. In architecture, which one of the following refers to the size relationship of the element itself to a known or established standard?

(a) Unity

(b) Scale

(c) Proportion

(d) Pattern

5. The duplication or repetition of like elements to lead the visual motion within a space is

(a) contrast

(b) pattern

(c) texture

(d) emphasis

6. Which one of the following is achieved through a balance of elements around a centre focal point?

(a) Symmetrical balance

(b) Asymmetrical balance

(c) Radial balance

(d) Cosmic balance

7. The bulbous, ribbed stone finial of a Shikhara in Indian architecture is known as

(a) Aedicule

(b) Apadana

(c) Baldachin

(d) Amalaka

8. A ceiling, soffit, or vault decorated with a pattern of recessed panels is referred to as

(a) joist

(b) lacunar

(c) Kondo

(d) intrados

9. Consider the following statements with respect to colour wheel :

1. The first colour wheel was invented by Sir Isaac Newton.

2. The analogous colour scheme uses colours that are adjacent to each other on the colour wheel.

3. The complementary colour scheme is made of two colours that are opposite to each other on the colour wheel.

Which of the above statements are correct?

(a) 1, 2 and 3

(b) 1 and 2 only

(c) 2 and 3 only

(d) 1 and 3 only

10. Consider the following statements with respect to transformation of form :

1. A sphere can be transformed into any number of ovoid and ellipsoidal forms by elongating it along an axis.
2. A pyramid cannot be transformed by altering the dimensions of the base, modifying the height of the apex, or tilting normally the vertical axis.

Which of the above statements is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

11. Which one of the following is measured as the reciprocal of the visual angle (expressed in minutes) subtended at the eye by the least perceptible detail?

(a) Visual efficiency

(b) Contrast sensitivity

(c) Visual performance

(d) Visual acuity

12. Which one of the following relates to a regular occurrence of similar and like effects?

(a) Rhythm in architecture

(b) Harmony in architecture

(c) Balance in architecture

(d) Variety in architecture

13. Which one of the following is a special number that can have one of two values : true or false, and is useful to do logic operations?

(a) Pointer

(b) String

(c) Boolean

(d) Float

14. Which one of the following is the process of repeating items in self-similar ways in parametric designs?

(a) Recursion

(b) Tiling

(c) Weaving

(d) Branching

15. Which one of the following commands is **not** a modify command in AutoCAD?

(a) Circle

(b) Move

(c) Copy

(d) Rotate

16. The time in seconds taken for a sound to decrease in value by 60 dB is known as

- (a) placidity time
- (b) desorption time
- (c) absorption time
- (d) reverberation time

17. The absorption coefficient of brickwork at 125 Hz is

- (a) 0.05
- (b) 0.03
- (c) 0.02
- (d) 0.01

18. What is the critical frequency for acoustic design?

- (a) 10000 Hz
- (b) 5000 Hz
- (c) 1000 Hz
- (d) 500 Hz

19. Which one of the following is the length of time taken for the sound energy to fall to one-millionth of the original level after switching off the sound source?

- (a) Reverberation time
- (b) Reflection time
- (c) Absorption time
- (d) Refracted time

20. Which one of the following is defined as the amount or flow of wave energy crossing per unit time through a unit area taken perpendicular to the direction of propagation?

- (a) Loudness
- (b) Echo
- (c) Reverberation
- (d) Intensity of sound

21. Match the following lists :

<i>List-I</i>	<i>List-II</i>
P. Sound insulation	1. Reduction in sound intensity
Q. Transmission loss	2. Reflection of sound
R. Sound foci	3. A measure used to reduce the level of sound
S. Echoes	4. Concentration of reflected sound waves

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
3 1 4 2

(c) P Q R S
3 4 1 2

(d) P Q R S
4 3 1 2

22. Ludwig Mies van der Rohe's Farnsworth House, Plano, Illinois, 1951 is a unique example of

- (a) classicism
- (b) vernacular architecture
- (c) tropical architecture
- (d) minimalist architecture

23. Name the architect who propagated the urban model of tube house in India.

- (a) Raj Rewal
- (b) A. P. Kanvinde
- (c) Charles Correa
- (d) Uttam C. Jain

24. In contemporary architecture, who among the following architects is known for 'kinetic architecture' style?

- (a) Kengo Kuma
- (b) Tadao Ando
- (c) Mario Botta
- (d) Santiago Calatrava

25. Art Nouveau was the predominant architecture style of

- (a) Walter Gropius
- (b) Ludwig Mies van der Rohe
- (c) Antoni Gaudi
- (d) Le Corbusier

26. Match the following lists :

<i>List-I</i> (Architects)	<i>List-II</i> (Design philosophies)
P. Ludwig Mies van der Rohe	1. Organic architecture
Q. Frank Lloyd Wright	2. Form follows function
R. Robert Venturi	3. Less is more
S. Louis Sullivan	4. Less is bore

Select the correct answer using the code given below.

(a) P Q R S
 4 3 2 1

(b) P Q R S
 3 1 4 2

(c) P Q R S
 3 4 1 2

(d) P Q R S
 2 3 4 1

27. Match the following lists :

List-I
(Projects)

List-II
(Architects)

- | | |
|--|-----------------------|
| P. Indian Parliament Library | 1. Charles Correa |
| Q. Vidhan Bhawan Government Building | 2. Raj Rewal |
| R. India International Centre, New Delhi | 3. Le Corbusier |
| S. Villa Shodhan | 4. Joseph Allen Stein |

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
3 1 4 2

(c) P Q R S
3 4 1 2

(d) P Q R S
2 1 4 3

28. In the cost-volume relationship graph, which criterion is parallel to the output cost?

- (a) Total revenue
- (b) Profit
- (c) Variable cost
- (d) Fixed cost

29. Which one of the following is **not** used for estimating the cost of building construction?

- (a) Item-wise estimate
- (b) Cubic contents method
- (c) Building cost index
- (d) Density index

30. In estimating and costing, 'spot items' are

- (a) the items purchased from market
- (b) the items included after necessary inspection and measurement on site
- (c) the items purchased on spot for the construction of the building
- (d) the items prefabricated on site

31. Consider the following statements with respect to computer applications in architecture :

1. Consider that an elementary school will design an addition to accommodate an increased number of student enrollment. Revit cannot classify parts of the elementary school renovation project in phases such as New, Existing, Demolished, or Temporary.
2. One of the methods for creating topography in Revit is by placing points at a specific location and assigning each point an elevation height.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

32. Consider the following statements with respect to raster and vector files :

1. An Encapsulated PostScript file (.eps) denotes a raster file.
2. Adobe Illustrator file (.ai) denotes a vector file.
3. Raster files can be opened and edited in Adobe Illustrator.

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

33. Identify the correct indication for the following point inferences in Google SketchUp.

- (a) Endpoint—green; Intersection—black; Midpoint—light blue
- (b) Endpoint—black; Intersection—green; Midpoint—light blue
- (c) Endpoint—light blue; Intersection—green; Midpoint—black
- (d) Endpoint—light blue; Intersection—black; Midpoint—green

34. Black-body radiation is described by which one of the following equations?

- (a) Radiant equation
- (b) Stefan-Boltzmann equation
- (c) Ellipse equation
- (d) Penman equation

35. Which one of the following effects is referring to aerosol-mediated changes in cloud albedo?

- (a) Albrecht effect
- (b) Hydrological effect
- (c) Twomey effect
- (d) Cloud lifetime effect

36. The plane in which the earth moves around the sun is called

- (a) autumnal equinox
- (b) eccentricity of the earth
- (c) vernal equinox
- (d) ecliptic of date

37. Which one of the following is the ratio of the actual amount of moisture present to the amount of moisture the air could hold at a given temperature expressed as percentage?

- (a) Relative humidity
- (b) Absolute humidity
- (c) Humidity factor
- (d) Humidity ratio

38. Match the following lists :

<i>List-I</i> (Thermal comfort)	<i>List-II</i> (Developers)
P. Effective temperature	1. Givoni
Q. Equatorial comfort index	2. Houghton and Yaglou
R. Bioclimatic chart	3. C. G. Webb
S. Thermal stress index	4. V. Olgyay

Select the correct answer using the code given below.

- (a) P Q R S
4 3 2 1
- (b) P Q R S
2 1 4 3
- (c) P Q R S
3 4 1 2
- (d) P Q R S
2 3 4 1

39. Which one of the following components is **not** associated with daylight factor?

- (a) Sky component
- (b) Design component
- (c) Externally reflected component
- (d) Internally reflected component

40. The housing unit having six-point support concrete skeleton with cantilevered slabs is called
- (a) Prairie housing system
 - (b) Domino housing system**
 - (c) Ribbon housing system
 - (d) Frame web housing system
41. As per C. A. Doxiadis, which one of the following is **not** an element of ekistics elements, which is essential for an inclusive approach to human settlements?
- (a) Man
 - (b) Society
 - (c) Nature
 - (d) Climate**
42. A cube can be transformed into similar prismatic forms through discrete changes in height, width, or length, and can be compressed into a planar form or be stretched out into a linear one. This transformation is referred to as
- (a) dimensional transformation**
 - (b) subtractive transformation
 - (c) additive transformation
 - (d) multiplicative transformation
43. The wedge-shaped stone, often embellished voussoir at the crown of an arch, serving to lock the other voussoirs in place, is called
- (a) springer
 - (b) keystone**
 - (c) archivolt
 - (d) intrados
44. The 'Three Magnets' concept of city planning was drawn by
- (a) Alfred Marshall
 - (b) Ebenezer Howard**
 - (c) Raymond Unwin
 - (d) Barry Parker
45. Which one of the following is measured as the amount of flux falling on unit area?
- (a) Luminance
 - (b) Illumination**
 - (c) Intensity
 - (d) Spread of light

46. Consider the following statements for adopting long wall-short wall method in preparing building estimates :

1. For long walls, long wall length out-to-out = centre to centre length + half breadth on one side + half breadth on another side.
2. For short walls, short wall length in-to-in = centre to centre length - one breadth.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

47. Consider the quantities of brickwork and plastering required in a wall 6 m long, 3 m high and 30 cm wide. If the cost of brickwork is ₹ 1,500/cu. m and plastering is ₹ 200/sq. m, the total cost including brickwork and plastering (2 sides) is

- (a) ₹ 11,300
- (b) ₹ 12,300
- (c) ₹ 13,300
- (d) ₹ 15,300

48. For estimating and costing of timber roofing, the unit of measurement is

- (a) square metre
- (b) metre
- (c) cubic metre
- (d) per metre

49. Match the following lists :

List-I
(Cities)

List-II
(Planners)

- | | |
|----------------|--------------------|
| P. Islamabad | 1. Ebenezer Howard |
| Q. Radburn | 2. Koenigsberger |
| R. Welwyn | 3. C. A. Doxiadis |
| S. Bhubaneswar | 4. Clarence Stein |

Select the correct answer using the code given below.

- (a) P Q R S
4 3 2 1
- (b) P Q R S
2 1 4 3
- (c) P Q R S
3 4 1 2
- (d) P Q R S
2 3 4 1

50. Gravity model is used in transport planning studies for

- (a) trip generation analysis
- (b) trip distribution analysis
- (c) travel assignment analysis
- (d) mode choice analysis

51. Match the following lists :

List-I (Popular proponents in city planning)	List-II (Theories/Concepts)
P. Patrick Geddes	1. Garden city
Q. Ebenezer Howard	2. Neighbourhood unit
R. Frank Lloyd Wright	3. Broadacre city
S. Charles Arthur Perry	4. Place-work-folk interrelationships

Select the correct answer using the code given below.

(a) P Q R S
1 2 3 4

(b) P Q R S
4 1 3 2

(c) P Q R S
4 1 2 3

(d) P Q R S
4 3 2 1

52. Which one of the following meets the needs of present generations without compromising the ability of future generations to meet their own needs?

(a) Human resource development

(b) Sustainable development

(c) Comprehensive development

(d) Equitable development

53. A hostel building is proposed in an urban area. The available plot size is 12 m × 30 m. If the permissible floor area ratio is 2.5 and the permissible ground coverage is 50%, the maximum number of floors to be achieved to build is

(a) 4

(b) 5

(c) 6

(d) 7

54. Match the following lists :

List-I (The components of travel demand)	List-II (The forecasting models)
P. Trip generation	1. Binary logit models
Q. Trip distribution	2. Regression models
R. Traffic assignment	3. Growth factors models
S. Modal split	4. Capacity restraint models

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
2 1 4 3

(c) P Q R S
3 4 1 2

(d) P Q R S
2 3 4 1

55. For the purposes of preparing the Register of Architects for the first time, who acts as the Secretary of the Tribunal?

(a) The Chairperson

(b) The Director

(c) The Registrar

(d) The Central Government Nominee

56. For the purposes of examination by the World Heritage Committee, what is the periodic reporting cycle time period for the States Parties?

- (a) Every two years
- (b) Every three years
- (c) Every five years
- (d) Every six years

57. Cultural heritage is understood to include monuments, groups of buildings and sites of cultural value as per which one of the following Articles of the World Heritage Convention?

- (a) Article 1
- (b) Article 2A
- (c) Article 2D
- (d) Article 1A

58. Consider the following statements with respect to the Council of Architecture :

1. The Council of Architecture is a corporate body.
2. The Council of Architecture can enroll persons holding recognized degree or diploma in Architecture; or persons who have been practising as architects for a period of 5 years before 1st September, 1972.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

59. An architect sets up a private limited company in which he can take two or more directors who must be registered with the Council of Architecture. As far as income tax, provident fund and other laws are concerned, such a firm is considered as

- (a) professional firm only
- (b) business firm only
- (c) both professional and business firms
- (d) neither professional nor business firm

60. Consider the following statements with respect to folding of drawings in architectural practice :

1. In foolscap size folding method, the prints are folded in rectangular or square sizes without any margin on the left side.
2. In portfolio method, folding is done with a margin on side for punching holes for filing.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

61. "An arbitrary index which combines into a single value the effect of temperature, humidity and air movement on the sensation of warmth or cold felt by the human body and its numerical value is that of the temperature of still saturated air which would induce an identical sensation" is called

- (a) dry-bulb temperature
- (b) globe temperature
- (c) wet-bulb temperature
- (d) effective temperature**

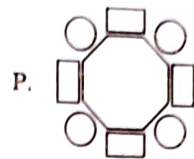
62. In interior design, liftoff butt hinges are used for

- (a) fire escape doors
- (b) lift doors
- (c) doors which have to be removed from time to time**
- (d) heavy doors

63. Match the following lists :

List-I
(Graphical notations representing various patterns of clustering spatial organizations)

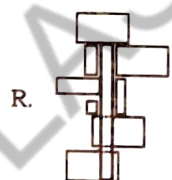
List-II
(Descriptions)



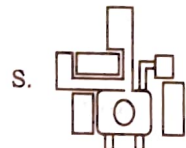
1. Clustered about an entry



2. Centralized pattern



3. Contained within a space



4. Grouped along a path

Select the correct answer using the code given below.

(a) P Q R S
1 2 3 4

**(b) P Q R S
2 3 4 1**

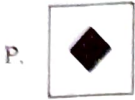
(c) P Q R S
2 4 3 1

(d) P Q R S
1 4 2 3

64. Match the following lists :

List-I
(Illustrations)

List-II
(Concepts explaining the
spatial relationships)



1. Adjacent spaces



2. Spaces linked by a
common space



3. Interlocking spaces



4. Space within a
space

Select the correct answer using the code
given below.

(a) P Q R S
1 2 3 4

(b) P Q R S
3 1 4 2

(c) P Q R S
3 2 1 4

(d) P Q R S
4 3 1 2

65. For general lighting purpose, which type
of lamp with highest efficacy would be
appropriate for a residential area?

(a) Metal halide lamp

(b) High-pressure sodium lamp

(c) High-pressure mercury lamp

(d) Low-pressure sodium lamp

66. Which one of the following is **not** an
edge-to-edge joint option in case of
wooden joints?

(a) Tongue and groove

(b) Dowel

(c) Dado

(d) Biscuit

67. Which one of the following regions is
regarded as the 'canary in the coal mine'
for global warming?

(a) Alaska region

(b) South Antarctica region

(c) Tibetan Plateau region

(d) Ladakh region

68. Which one of the following countries has created a type of hybrid cyborg tree with the advancement of the 'super-tree', where biophysical trees have been replaced with tree-like cement structures covered in a 'living skin' of over 200 native plant species controlled by photovoltaic technology?

- (a) China
- (b) Singapore**
- (c) Indonesia
- (d) Australia

69. If the slope raises for 5 m in 1000 m, then the gradient (%) or percentage of slope is

- (a) 5%
- (b) 0.5%**
- (c) 0.05%
- (d) 0.005%

70. Match the following lists :

List-I
(Graphical notations representing various circulation patterns in a landscape setting)

List-II
(Concepts defining such line of induced movement)



1. Meandering



2. Dispersing



3. Congregating



4. Diverging

Select the correct answer using the code given below.

- (a) P Q R S
1 2 3 4

- (b) P Q R S**
2 1 4 3

- (c) P Q R S
2 4 3 1

- (d) P Q R S
1 4 2 3

71. On a topographic map, if 2 cm on the map represents 1 km on the ground, what is the scale at which the map is produced?

(a) 1 : 5000

(b) 1 : 500

(c) 1 : 50000

(d) 1 : 20000

72. Which one of the following is correct for the most appropriate partition wall considering sound insulation?

(a) $\frac{5}{8}$ th inch gypsum wallboard

(b) $\frac{3}{8}$ th inch gypsum lath plus $\frac{1}{2}$ inch gypsum plaster with white coat finish on each side

(c) 8-inch concrete block

(d) Resilient clips $\frac{3}{8}$ th inch gypsum backer board plus $\frac{1}{2}$ inch fiber board laminated on each side

73. Which one of the following is defined as the energy dissipated by inelastic cyclic deformations, given by the area within the load deformation curve?

(a) Thermal energy

(b) Latent energy

(c) Hysteretic energy

(d) Cyclic energy

74. A contour or line on a map bounding points of equal intensity for a particular earthquake is referred to as

(a) crust

(b) isoseismal

(c) intraplate

(d) hypocentre

75. The zone of earthquakes surrounding the Pacific Ocean, where about 90 percent of the world's earthquakes occur, is known as

(a) the Alpine Belt

(b) the Ring of Fire

(c) oceanic spreading ridge

(d) oceanic trench

76. The most important measure of environmental impact of a building material is the amount of energy used to produce a unit weight of the material. It is known as

- (a) stored energy
- (b) reserved energy
- (c) embodied energy
- (d) trans-energy

77. During significant rainfall, sewers overflow, carrying combined household and industrial wastes directly to waterways. Materials discarded on streets or sidewalks are also carried directly to waterways. This kind of environmental pollution is known as

- (a) climate change
- (b) point source
- (c) non-point source
- (d) surface contamination

78. Which of the following natural heritage sites recognized under the UNESCO World Heritage List demonstrates the speciation related to the breakup of the ancient mass of Gondwanaland in the early Jurassic Period? It is also commonly referred to as an 'Evolutionary Ecotone' illustrating 'Out of Africa' and 'Out of Asia'.

- (a) Western Ghats
- (b) The Sunderbans
- (c) Nanda Devi and Valley of Flowers National Parks
- (d) Great Himalayan National Park Conservation Area

79. Consider the following statements with respect to eco-sensitive zone as mentioned in the URDPFI (2015) Guidelines :

1. As general principle, the width of the eco-sensitive zone could go up to 10 km around a protected area as provided in the Wildlife Conservation Strategy, 2002.
2. As per the National Wildlife Action Plan (NWAP), 2002–2016, "all identified areas around protected areas and wildlife corridors are to be declared as ecologically fragile under the Environment (Protection) Act, 1986".

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

80. Which one of the following is the portion of precipitation that is **not** evaporated?

- (a) Liquid precipitation
- (b) Runoff
- (c) Non-liquid precipitation
- (d) Base flow

81. Which one of the following is the temperature of a surface upon which moisture contained in the air will condense?
- Condensation temperature
 - Wet-bulb temperature
 - Absolute temperature
 - Dew point temperature
82. The obsolescence factor in assessing the housing shortage is defined as which one of the following?
- The ratio of households that are residing in unacceptably congested conditions
 - The ratio of households deprived from physical and socio-cultural viewpoints
 - The non-serviceable units are taken out of housing stock
 - The unlawfully constructed dwelling units are taken out of housing stock
83. In metropolitan cities for low-income housing, which one of the following statements is correct?
- Plot sizes can be 100 square metres in colonies located in congested areas.
 - A minimum of 30 percent of the plot size shall be left open.
 - A minimum of 50 percent of the plot size shall be left open.
 - It shall not be made mandatory to leave setback on any side in colonies.
84. Rapoport, in 1969, classifies traditional buildings as
- primitive, neo-vernacular, pre-industrial vernacular
 - traditional vernacular, pre-industrial vernacular, modern vernacular
 - primitive, pre-industrial vernacular, post-industrial vernacular
 - primitive, pre-industrial vernacular, modern vernacular
85. Net residential density does **not** include
- children's play area within the housing site
 - parking spaces within the housing site
 - landscaped areas outside the housing site
 - roads surrounding the housing site
86. Which one of the following is **not** an essential quality for a successful urban village as per the first report of the 'Urban Villages Forum (1992)' by Prince Charles Foundation?
- Place to be within easy walking distance
 - Residential development and employment uses (1 : 1 ratio)
 - There should be a mixture of different types and sizes of buildings
 - 5000-10000 people in a notional area of 100 acres

87. The height of all rooms for human habitation shall **not** be less than

- (a) 2.90 m
- (b) 2.75 m**
- (c) 2.80 m
- (d) 3.15 m

88. For centrally protected monuments in India, as per the provisions in the AMASR Act (1958), every area, beginning at the limit of the protected area or the protected monument, as the case may be, and extending to a distance of 100 metres in all directions, shall be called

- (a) unprotected area
- (b) prohibited area**
- (c) fringe area
- (d) urban limit

89. Match the following lists :

<i>List-I</i> (ICOMOS Charters)	<i>List-II</i> (The focuses on which these Charters are laid out)
P. The Venice Charter, 1964	1. For all types of places of cultural significance including natural, indigenous and historic places with cultural values
Q. The Washington Charter, 1987	2. For the conservation and restoration of monuments and sites
R. The Burra Charter, 1999	3. For the conservation of historic towns and urban areas

Select the correct answer using the code given below.

- (a) P Q R
 1 2 3
- (b) P Q R
 2 1 3
- (c) P Q R
 2 3 1**
- (d) P Q R
 1 3 2

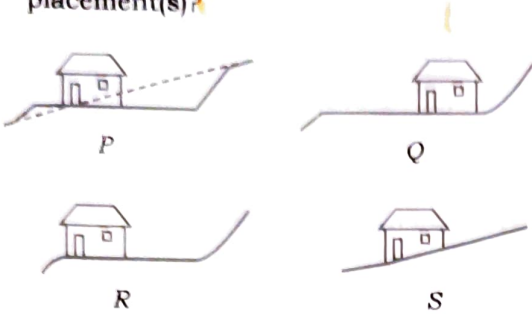
90. Match the following lists :

<i>List-I</i> (Items)	<i>List-II</i> (Descriptions)
P. Conservation	1. Returning a place to a known earlier state and distinguished by the introduction of materials
Q. Preservation	2. Returning of existing fabric of a place to a known earlier state by removing accretions without introducing new material
R. Restoration	3. Maintaining the fabric of a place in its existing state and retarding deterioration
S. Reconstruction	4. Processes of looking after a place so as to retain its historical significance

Select the correct answer using the code given below.

- (a) P Q R S
 4 3 2 1**
- (b) P Q R S
 3 1 4 2
- (c) P Q R S
 3 4 1 2
- (d) P Q R S
 2 1 4 3

91. In earthquake-prone area, which of the following is/are the most safe placement(s)?



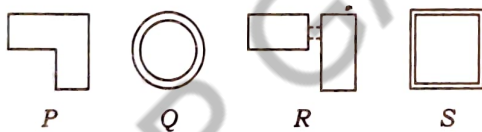
(a) Only P

(b) P and S

(c) Q and R

(d) R and S

92. Which one is the most dangerous shape amongst the given figures if the stability is concerned?



(a) P

(b) Q

(c) R

(d) S

93. Match the following lists :

List-I (Items of earthquake resilience design)	List-II (Descriptions)
P. Adobe	1. Pointed part of an outside wall of a building
Q. Buttresses	2. Vertical and horizontal elements made of bamboo
R. Wattle and Daub	3. For reinforcing the wall
S. Gables	4. Blocks of earth produced by throwing wet earth into a formwork

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
2 1 4 3

(c) P Q R S
3 4 1 2

(d) P Q R S
4 1 2 3

94. Which one of the following is an urban element that is shaped by the city (its 'laboratory' setting) and then, in turn, shapes its context? Its purpose is the incremental, continuous regeneration of the urban fabric. It is not a single end product but an element that impels and guides subsequent development.

(a) Urban greenway

(b) Urban farming

(c) Urban catalyst

(d) Imageability

95. Match the following lists :

<i>List-I</i> (Proponents)	<i>List-II</i> (Theories/ Concepts/ Manifestations/ Books)
P. Gordon Cullen	1. Critical Regionalism
Q. Christopher Alexander	2. Pattern Language
R. Kenneth Frampton	3. Bioclimatic Skyscrapers
S. Kenneth Yeang	4. Serial Vision

Select the correct answer using the code given below.

(a) P Q R S
 1 2 3 4

(b) P Q R S
 2 1 3 4

(c) P Q R S
 3 2 1 4

(d) P Q R S
 4 2 1 3

96. Consider the following statements with respect to urban design framework :

1. An urban design framework is a document describing and illustrating how planning and design policies and principles should be implemented in an area where there is a need to control, guide and promote change. It includes a two-dimensional vision of future infrastructure requirements.
2. Urban design frameworks are used to coordinate more detailed development briefs and master plans.

Which of the above statements is/are correct?

- (a) Both 1 and 2
(b) 2 only
(c) 1 only
(d) Neither 1 nor 2

97. Match the following lists :

<i>List-I</i> (Qualitative indices of good urban design as articulated in theory of responsive environments)	<i>List-II</i> (Descriptions)
P. Permeability	1. Designing the spatial and constructional arrangement of individual buildings and outdoor places
Q. Legibility	2. Designing the overall layout of routes and development blocks
R. Robustness	3. Designing the massing of the buildings and the enclosure of public space
S. Personalization	4. Making the design to encourage the people to put their own mark on the places where they live and work

Select the correct answer using the code given below.

(a) P Q R S
 1 2 3 4

(b) P Q R S
 2 3 1 4

(c) P Q R S
 3 2 1 4

(d) P Q R S
 4 3 2 1

Ans: B

98. Match the following lists :

List-I (Cities)	List-II (Designers)
P. Savannah	1. Thomas Holme
Q. Philadelphia	2. Pierre Charles
R. Williamsburg	3. James Oglethorpe
S. Washington, DC	4. Theodorick Bland

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
3 1 4 2

(c) P Q R S
3 4 1 2

(d) P Q R S
2 1 4 3

99. Match the following lists :

List-I (Theories/Concepts)	List-II (Proponents)
P. Central place theory	1. Patrick Geddes
Q. Garden city	2. Homer Hoyt
R. City region	3. Walter Christaller
S. Sector theory	4. E. Howard

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
3 4 2 1

(c) P Q R S
3 4 1 2

(d) P Q R S
2 1 4 3

100. "Improvement of low-cost products without impacting functional characteristics or reducing quality shows that innovation can yield products that cost less but maintain the expected levels of performance in construction management." It is called

(a) value engineering

(b) incentive engineering

(c) brand building

(d) cost management

101. In construction management, the difference between the Latest Start Time (LST) and the Earliest Start Time (EST) of an activity, a measure of the amount by which the start of an activity can be delayed in consistent with the completion of the project on time, is called

(a) critical event

(b) aberration

(c) total float

(d) stop loss

102. Due to some of the circumstances, the contractor may be compelled to set the project's completion time objectives lesser than the analyzed completion time. Such measure is known as

- (a) project time spreading
- (b) time crashing technique**
- (c) time increased schedule
- (d) CPM

103. Consider the following statements regarding time-cost trade-off :

1. Time-cost trade-off analysis shall be done to obtain a minimum total cost of the project within the specified time.
2. Time-cost trade-off analysis shall be done taking into consideration direct cost and indirect cost of the project.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2**
- (d) Neither 1 nor 2

104. In construction management, especially in resource planning, the process where reallocation of slack resources from non-critical path to critical path activity to obtain a reduction of time or by shifting the activities within the floats available with them to obtain uniform resource requirements, is referred to

- (a) resource allocation
- (b) resource levelling**
- (c) resource schedule
- (d) resource depletion

105. Consider the following statements regarding critical path :

1. Critical path will be the longest path, but the shortest duration for completing the project.
2. Critical path will be the shortest path, but the longest duration for completing the project.

Which of the above statements is/are correct?

- (a) 1, only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

106. Match the following lists :

<i>List-I</i> (Masonry problems)	<i>List-II</i> (Indications)
P. Bulging	1. Indicates movement within the wall
Q. Cracking	2. Indicates excessive dampness
R. Straining	3. Indicates moisture penetration due to poor brick or sandblasting
S. Crumbling	4. Indicates that the wall has moved

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
3 1 4 2 **Correction ANS: D**

(c) P Q R S
3 4 1 2

(d) P Q R S
4 1 2 3

107. Match the following lists :

<i>List-I</i> (Conservation interventions)	<i>List-II</i> (Lingual definitions)
P. Salvage	1. To maintain the fabric of a property in its existing state
Q. Preservation	2. To save the property from fire and other damages
R. Refurbishment	3. To reproduce or the action of reproducing
S. Replication	4. To repolish or do up again

Select the correct answer using the code given below.

(a) P Q R S
4 3 2 1

(b) P Q R S
2 1 4 3

(c) P Q R S
3 4 1 2

(d) P Q R S
4 1 2 3

108. The guidelines for preservation, conservation and restoration of monuments and heritage sites recommended by ICOMOS are associated with the

(a) Chicago Charter

(b) Athens Charter

(c) Washington Charter

(d) Venice Charter

109. What are the two different mechanisms for generating alarms and events in BACnet?

(a) Intrinsic reporting and algorithmic change reporting

(b) Extrinsic reporting and normal change reporting

(c) Extrinsic reporting and algorithmic change reporting

(d) Intrinsic reporting and normal change reporting

110. For which one of the following applications is the 'priority level 5' a standard in BACnet?

- (a) Manual Operator
- (b) Manual-Life Safety
- (c) Critical Equipment Control
- (d) Automatic-Life Safety

111. Consider the following statements related to BACnet :

1. BACnet is an object-oriented protocol.
2. Every product in a BACnet network must have a device object.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

112. In building automation system, which of the following are used in a LAN to connect a number of nodes and allow them to communicate with each other?

- (a) Network switches
- (b) Databases that log activity
- (c) Web servers
- (d) Operator panels

113. Which one of the following is correct with respect to display types with their descriptions in building automation system?

- (a) Detail : Displays detailed status information about system equipment
- (b) Trends : Graphically displays changes in values, over time, of one or more variables
- (c) Summary : Displays various types of information about related points on a single display
- (d) Group : Displays information, such as alarms and events, in list form

114. In building automation, DALI refers to

- (a) Designed Application in Lighting Interface
- (b) Digital Addressable Lighting Interface
- (c) Designed Advanced Lighting Interface
- (d) Digital Advanced Lighting Interface

115. As per Part 4 Fire and Life Safety Regulations mentioned in the NBC (2016), the space within a building that is enclosed by fire barrier or fire-resistant walls on all sides including top and bottom is defined as which one of the following terms?

- (a) Fire barrier
- (b) Fire compartment
- (c) Fire exit
- (d) Fire door assembly

116. Which one of the following statements is **not** correct for making the hotels/hospitality centres accessible in India?

(a) Minimum ten percent of the total rooms including their toilet room, shower room, balcony, etc., shall be accessible.

(b) The accessible rooms should preferably be provided on the ground floor for ease of evacuation in case of an emergency.

(c) The clear door width of 900 mm shall be provided for all entrances.

(d) The minimum passage width of 1200 mm in the rooms shall be provided.

117. In case of external staircases in buildings, which one of the following indicates a wrong requirement?

(a) Spiral staircase shall be limited to low occupant load

(b) Handrail, to be provided on one side, shall be of a height not less than 1000 mm

(c) No external staircase shall be inclined at an angle greater than 45° from the horizontal

(d) Entrance to the external stairs shall be separate and remote from the internal staircase

118. In case of intermittent water supply in buildings, which one of the following guidelines should be adopted for calculation of capacity?

(a) When the supply is from main OHT, the capacity of individual OHT may be taken as one day demand.

(b) In case of buildings like apartments, hotels, hospitals, and commercial, the capacity of UGT and OHT may be taken as one and a half days and half a day demand.

(c) Wherever raw water and treated water are stored in separate UGTs, the combined storage capacity shall be of one day demand.

(d) In case of sewage treatment plant, for treated water storage in respect of flushing, half a day flushing demand shall be stored in UGT or treated effluent storage tank which is part of the plant, and half a day demand shall be stored in OHT.

119. Distribution pipes in plumbing shall **not** be made with which of the following?

(a) High-density polyethylene pipes

(b) Asbestos cement pipes

(c) Unplasticized PVC pipes

(d) Wrought iron pipes

120. Which of the following colours are recommended for indicating sewers, wastewater pipes, rainwater pipes and existing work?

(a) Sewers in red, wastewater pipes in blue, rainwater pipes in green, existing work in black

(b) Sewers in black, wastewater pipes in blue, rainwater pipes in green, existing work in red

(c) Sewers in red, wastewater pipes in blue, rainwater pipes in blue, existing work in black

(d) Sewers in black, wastewater pipes in blue, rainwater pipes in blue, existing work in red