	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	


1. As per NBC 2005, under requirements of parts of buildings, what is the minimum area and width of a habitable room, when there is only one room?
 - (a) Area 7.5 sqm, width 2.5 m
 - (b) Area 9.5 sqm, width 2.4 m
 - (c) Area 10 sqm, width 3 m
 - (d) Area 12 sqm, width 2.5 m

2. As per NBC 2005, what is the minimum and maximum height of the ceiling of any basement above the average surrounding ground level?
 - (a) Minimum 0.9 m and maximum 1.2 m
 - (b) Minimum 1.0 m and maximum 1.2 m
 - (c) Minimum 0.9 m and maximum 1.5 m
 - (d) Minimum 1.0 m and maximum 1.5 m

3. What is the minimum width and height of the passage way required as per NBC 2005 for the fire fighting vehicles to enter the premises at the main entrance?
 - (a) Width 6.0 m and height 6.5 m
 - (b) Width 4.5 m and height 6.0 m
 - (c) Width 6.0 m and height 5.0 m
 - (d) Width 4.5 m and height 5.0 m

4. As per NBC 2005, what is the minimum fire resistance rating for glass façade in high rise buildings?
 - (a) 2 hours
 - (b) 1.5 hours
 - (c) 1 hour
 - (d) 0.5 hour

5. As per NBC 2005, automatic sprinklers shall be installed in basements used as car parks or storage occupancy, if the area exceeds
 - (a) 200 sqm
 - (b) 300 sqm
 - (c) 400 sqm
 - (d) 500 sqm

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

6. Based on guide lines and space standards for barrier free built environment for disabled and elderly persons, match the statements in Group I with true or false in Group II

Group I	Group II
P. Minimum width of ramp 1.8 m	1. True
Q. Minimum size of toilet shall be 1.5 m × 1.75 m	2. False
R. Minimum width of stair shall be 1.5 m	
S. Minimum clear opening of exit/entry door shall be 1.2 m	
(a) P-1, Q-2, R-1, S-2	(b) P-1, Q-1, R-2, S-2
(c) P-2, Q-1, R-2, S-1	(d) P-2, Q-2, R-1, S-1


7. The climatic factors that influence the optimum orientation of the building from the point of view of lighting and ventilation are

- (a) Prevailing winds
- (b) Relative humidity
- (c) Solar radiation and temperature
- (d) All of the above

8. Match the statements in Group I with corresponding statements in Group II.

Group I	Group II
P. Candela (cd)	1. The illuminance from the sun without taking in to account the light from the sky
Q. Lumen (lm)	2. The SI unit of luminous intensity
R. Direct solar illuminance	3. The maximum distance to which a given day light factor contour penetrates in to a room
S. Day light penetration	4. The SI unit of luminous flux
(a) P-2, Q-4, R-1, S-3	(b) P-1, Q-3, R-2, S-4
(c) P-4, Q-2, R-1, S-3	(d) P-2, Q-4, R-3, S-1

9. The number of standard size I class bricks per CUM of brick work in CM is about

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

- (a) 800 numbers (b) 700 numbers
(c) 500 numbers (d) 200 numbers

10. Laterite is chemically classified as

- (a) Argillaceous rock (b) Siliceous rock
(c) Metamorphic rock (d) Calcareous rock

11. The purpose of seasoning of timber is to

- (a) Increase the weight of timber
(b) Reduce the moisture content
(c) Remove voids
(d) Change the direction of grains

12. Closed contours of decreasing values towards their centre represent

- (a) A river bed (b) A saddle or pass
(c) A hill (d) A depression

13. Creep strain is caused due to


- (a) Dead load (b) Cyclic load
(c) Live load (d) Independent of load

14. A simply supported beam of span L carries a total load W which is uniformly distributed, the maximum bending moment M is

- (a) $WL/2$ (b) $WL/4$ (c) $WL/8$ (d) $WL/12$

15. In a building the function of Air Handling Unit (AHU) is to

- (a) Collect the hot air from the room and throw it outside the building

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

- (b) Collect fresh air from outside and circulate inside the building
- (c) Purify and re-circulate the cool conditioned air
- (d) Act as a unit in which air is circulated from one place to other

16. Match the items/statements in group I with those in group II.

Group I	Group II
P. Cross talk	1. A sound emitted at a single frequency
Q. Pure tone	2. Unwanted sound hazardous to health
R. Noise	3. Unwanted sound transmission between different spaces via duct
S. Transient sound	4. Sound which is audible for a limited period of time
(a) P-3, Q-1, R-2, S-4	(b) P-1, Q-2, R-4, S-3
(c) P-4, Q-3, R-1, S-2	(d) P-2, Q-4, R-3, S-1

17. The primary difference between the model tab and the layout tab is


- (a) Model tab is used to create drawing and layout tab represents the sheet to plot or print
- (b) Model tab is used for drawing 3D and layout tab used for drawing 2D
- (c) Model tab displays the copied drawing and the layout tab to layout the new drawing
- (d) Colour of the back ground

18. Which of the following refer to a model that represents all the dimensions of an object internal as well as external?

- (a) Constructive solid geometry methods
- (b) Wire frame model
- (c) Composite transformation
- (d) None of the above


19. The orthographic projection that show more than one side of an object are called

- (a) Isometric projection
- (b) Rectangular 2D projection


	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

- (c) Both (a) and (b) (d) None of the above


20. The performance of a specific task in Critical Path Method (CPM) is known as
(a) Dummy (b) Activity (c) Event (d) Contract
21. PERT technique of network analysis is mainly used for
(a) Commercial projects
(b) Residential projects
(c) Research and development projects
(d) Deterministic activities
22. Which is an unethical action with respect to the architect's responsibility to his client?
(a) Advises client to forego unviable project
(b) Does not offer preliminary sketches without an agreement
(c) Undertakes construction for a fixed contract sum under design build service
(d) Guarantee any estimates or cost of the work
23. For earthquake resistant masonry structures, the vertical distance between openings one above the other in a load bearing wall shall not be less than
(a) 50 cm (b) 60 cm (c) 75 cm (d) 100 cm
24. As per Indian standard code of practice for pre stressed concrete (IS:1343-1980) the minimum grades of concrete to be used for post tensioned and pre tensioned structural elements are
(a) M15 and M20 (b) M20 for both
(c) M30 and M40 (d) M40 and M30
25. Ambient air quality standards in respect of noise for residential area/zone during day time and night time expressed in dB(A)Leg as per noise pollution (Regulation and control) rules are

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	


- (a) 75 and 70 (b) 65 and 55 (c) 55 and 45 (d) 50 and 40
26. Blue baby disease (methemoglobinemia) in children is caused by the presence of excess _____ in water.
- (a) Fluorides (b) Chlorides (c) Lead (d) Nitrates
27. Bituminous materials are commonly used in highway construction because of their good
- (a) Bond and tensile properties
(b) Shear strength and tensile properties
(c) Tensile and compression properties
(d) Binding and water proofing properties
28. Width of carriage way for a single lane is recommended to be
- (a) 5.5 m (b) 3.75 m (c) 4.5 m (d) 6.0 m
29. Which two sentences in the following convey the same meaning?
- P. There should have been checking at the airport
Q. I wonder if there should have been any checking at the airport
R. I want to know if there was any checking at the airport
S. Was not there any checking at the airport
- (a) R, Q (b) S, P (c) Q, P (d) R, P
30. Antonym of QUIESCENT
- (a) Unconcerned (b) Dormant (c) Active (d) Weak

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	


31. From the four alternatives given below, choose the one which can be substituted for the given Sentence, "A style in which a writer makes a display of his knowledge"
- (a) Verbose (b) Pedantic (c) Pompous (d) Ornate
32. Running at the same constant rate, 5 identical machines can produce a total of 225 bottles Per minute. At this rate, how many bottles could 8 such machines produce in half an hour?
- (a) 10,800 (b) 15,000 (c) 5,300 (d) 100,000
33. A dining hall is 6 m long and 4 m wide. If the sum of the floor area and ceiling area equals the sum of the area of four walls, then the volume of the hall in cum is
- (a) 86 (b) 64 (c) 57.6 (d) 48.5
34. How many of the following numbers are divisible by 72?
360, 434, 578, 648, 1080, 1240, 1296, 1440
- (a) 4 (b) 5 (c) 6 (d) 7
35. If 200 m long train travelling at 60 km per hour takes 1 minute to cross the bridge, then the Length of the bridge is
- (a) 1000 m (b) 800 m (c) 750 m (d) 600 m
36. A home loan lending company claims to be lending money at simple interest but includes Interest at every 6 months for calculating the principal. If it is charging an interest of 12%, then the effective rate of interest becomes
- (a) 12.25% (b) 12.36% (c) 12.45% (d) 12.75%
37. From a point X, on a level ground the angle of elevation of the top of tower is 45°. If the tower is 30 m high, the distance of point X from the foot of the tower is
- (a) 90 m (b) 60 m (c) 45 m (d) 30 m

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	


38. A fruit seller had some mangoes. He sells 30% mangoes and still has 350 mangoes. Then originally he had,
- (a) 700 mangoes (b) 600 mangoes
(c) 500 mangoes (d) 450 mangoes
39. A is 5 years older than B, B is 10 years older than C. If the total ages of A, B and C are 40. Then how old is B?
- (a) 15 years (b) 20 years (c) 30 years (d) 40 years
40. Which of the following is a non point source of water pollution?
- (a) Sewage treatment plants (b) Factories
(c) Urban and suburban lands (d) All of the above
41. Roof top rain water harvesting system followed in Rajasthan is known as
- (a) Tankas (b) Kuls (c) Baolis (d) Guls
42. Which of the following statement is not correct with respect to “Smart city”?
- (a) Provide real time information on parking, traffic congestion and public transport
(b) Urban region that is highly advanced in terms of overall infrastructure, sustainable real estate communication and market viability
(c) Energy efficient and will have low carbon foot print
(d) None of the above
43. Surge tanks are generally used
- (a) To guard against water hammer
(b) For storage of water
(c) As over flow valves
(d) To increase the velocity in a pipe line

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

44. What is gentrification?
- A policy aimed at renovating inner-city council housing stock
 - Building shopping centre in cities to create employment
 - The movement of the middle class in to suburban areas
 - Renovation of rundown city neighbourhoods to attract high income groups
45. Name the first state in India, which has made roof top rain water harvesting system compulsory for all the house holds across the state
- Rajasthan
 - Tamilnadu
 - Karnataka
 - Gujarat
46. A septic tank is a
- Aeration tank
 - Settling tank
 - Digestion tank
- P only
 - Q & R
 - P & R
 - Q only
47. The term municipal solid waste is generally used to describe
- Wastes from industrial process
 - Mining wastes
 - Wastes from homes, commercial establishments and institutions
 - Agricultural wastes
48. In colder climates passive solar design is most effective when
- Largest amount of windows face west
 - Longer axis of the building runs north south
 - Most of the used rooms are located on the west side of the building
 - None of the above

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

49. Which of the following is not applicable with respect to performance of the Window Glass?
- Visible transmittance
 - Solar heat gain co-efficient
 - Condensation resistance
 - None of the above
50. Xeriscaping is
- Landscaping and gardening that reduces or eliminates the need for supplement water from Irrigation
 - A landscape design with an advanced drip irrigation system
 - A landscape design using artificial turf
 - Kitchen garden which provides vegetables for the building occupants
51. Bioremediation is
- Use of native plants to restore local habitats
 - Use of plant materials to absorb VOC's from the indoor air
 - A waste management technique that involves the use of organisms to remove pollutants from a contaminated site
 - Developing a project in a agricultural field
52. Green Rating for Integrated Habitat Assessment for green buildings in India was conceived by
- Indian Green Building Council
 - Bureau of Energy Efficiency
 - The Energy Resources Institute
 - U.S Green Building Council

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

53. As per ASHRAE recommendations, what is the rate of fresh air distribution required in a building to prevent sick building syndrome?

- (a) 100-200 cubic feet per hour
- (b) 200-400 cubic feet per hour
- (c) 400-800 cubic feet per hour
- (d) 900-1200 cubic feet per hour

54. Match the statements in group I with that of group II on colours and what they convey in Interior space.

- | Group I | Group II |
|------------------------|--|
| P. Pastel yellow | 1. Purity, sterile, emptiness and decisiveness |
| Q. Red | 2. Stimulating, brightness, coziness |
| R. Green | 3. Aggressive, advancing, dominant |
| S. White | 4. Simplicity, security, balance |
| (a) P-1, Q-2, R-4, S-3 | (b) P-2, Q-3, R-4, S-1 |
| (c) P-3, Q-1, R-2, S-4 | (d) P-1, Q-4, R-3, S-2 |

55. In the rock cut architecture of India, which foreign influence is seen?


- (a) Indo-European
- (b) Roman
- (c) Persian
- (d) Greek

56. Which foreign influence is seen in the architecture of the city of Cochin in Kerala, India?


- (a) The Dutch
- (b) The British
- (c) The Portuguese
- (d) All of the above

57. The tallest among all the early Medieval temple of India is


- (a) Vithala Swamy temple at Hampi
- (b) Nataraja temple at Chidambaram
- (c) Brihadeswara temple at Tanjore

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

- (d) The Great temple at Srirangam
58. The seven Rathas or Pagodas at Mahabalipuram, Tamilnadu, India was constructed by
 (a) Pandyas (b) Pallavas (c) Cheras (d) Cholas
59. Flying buttresses, ribbed vaults and pointed arches are the characteristic styles/elements of
 (a) Romanesque architecture (b) Gothic architecture
 (c) Renaissance architecture (d) Byzantine architecture
60. Geometric master piece, Guggenheim museum, Newyork was designed by
 (a) Le-Corbusier (b) Oscar Niemeyer
 (c) Louis Sullivan (d) Frank Lloyd Wright
61. Brutalism is a style or movement in architecture where in
 (a) Building material, structural elements, services are exposed in pure and in honesty form
 (b) A revival of the styles and spirit of classic antiquity inspired directly from the classical period
 (c) Simplicity, reality combined with sense of human obligation
 (d) A pre-determined standard module is used for co-ordinating various components of building
62. Which one of the following Greek order is the most decorative?
 (a) Doric order (b) Tuscan order
 (c) Ionic order (d) Corinthian order
63. In an ancient Roman design Hippodrome was
 (a) To hold Wrestling
 (b) To hold Bull fights
 (c) To hold Horse and Chariot racing

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

- (d) An amphitheatre to hold public spectacles such as Dramas based on classical mythology
64. A grotesquely carved figure of Human or Animal projecting from gutter and serves as a rain Water spout is called
- (a) Stylobate (b) Carved spout
(c) Crepidoma (d) Gargoyle
65. Victoria memorial in Kolkata (Calcutta) was designed by
- (a) Sir William Emerson (b) Edwin Lutyens
(c) Herbert Baker (d) Vincent J. Esch
66. Pradhan Mantri Awas Yojna – Housing for all (urban) provides central assistance to urban Local bodies through States/UTs for
- (a) In-situ rehabilitation of existing urban slum dwellers using land as a resource through Private participation
(b) Affordable housing in partnership
(c) Subsidiary for beneficiary led individual house construction/enhancement
(d) All of the above
67. Supports, Roof gardens, Free floor plans, Free façade and Ribbon windows as 5 points of Modern architecture was developed by
- (a) Louis Sullivan (b) Le-Corbusier
(c) Frank Lloyd Wright (d) Eero Saarinen
68. What is the name of very Ornate architectural style developed in the later Renaissance period?
- (a) Flamboyant (b) Rayonnant
(c) Baroque (d) Neo-Classicism

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

69. What is the function of the over hanging slab in Frank Lloyd Wright's Falling Water structure/building?

- (a) Living area (b) Bed room
(c) Open dining area (d) Terrace

70. Match the trees in Group I with their over all form in Group II.

- | Group I | Group II |
|---|--------------------------------|
| P. Grevalia robusta (silver oak) | 1. Trees of spreading habit |
| Q. Tamarindus indica (tamarind) | 2. Columnar tree |
| R. Callistomen lanceolatus (bottle brush) | 3. Tall tree with broad canopy |
| S. Jacaranda mimosaefolia (nili gulmohur) | 4. Weeping tree |
- (a) P-2, Q-3, R-4, S-1 (b) P-3, Q-1, R-2, S-4
(c) P-1, Q-4, R-3, S-2 (d) P-4, Q-2, R-1, S-3

71. In which of the following garden, symbolically white sand represent water and flat rock represent earth?


- (a) Roman garden (b) Persian garden
(c) Egyptian garden (d) Japanese garden

72. Charbagh or Chahar Bagh garden layout is typical style of


- (a) English Landscape garden
(b) Persian garden
(c) Japanese garden
(d) Italian Renaissance garden

73. The semi circular or tri-angular decorative wall surface over an entrance bounded by a lintel and arch is called

- (a) Tympanum (b) Regula
(c) Spandrel (d) Gutta

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	


74. In Chandigarh city plan, architect Le- Corbusier's V7 concept relates to
- Housing typologies
 - Hierarchy of roads
 - Hierarchy of parks and open spaces
 - System of distribution of commercial and industrial spaces
75. In the Ancient system of Town planning in India, the pattern of plan, which resembles the petals of roses radiating outwards from the centre is called
- Swastika
 - Karmukha
 - Padmaka
 - Dandaka
76. In Urban planning, Linear City concept was first developed by
- Ebenezer Howard
 - Patric Geddes
 - F.L.Wright
 - Arturo Soria Y Mata
77. The most influential book "The image of the City" (1960), which had important and durable Influence in the field of Urban planning and Environmental psychology was authored by
- Ian L. Mc Harg
 - Garden Culen
 - Kevin Lynch
 - Lewis Mumford
78. Jawahar Kala Kendra building, Jaipur, merging the mystic power of the Navagrahas and the modernity of science was designed by
- B.V.Doshi
 - Charles Correa
 - Raj Rewal
 - Achyut Kanvinde
79. Who coined the phrase "Form follows Function" as a principle associated with modernist architecture and Industrial design

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	


- (a) Ludwig Mies Vander Rohe
- (b) Walter Gropius
- (c) Louis Sullivan
- (d) Frank Lloyd Wright

80. Historic railway station Chhatrapati Shivaji Maharaj Terminus (formerly Victoria Terminus) in Mumbai is the best example for the architectural style of

- (a) Indo-Saracenic architecture
 - (b) Colonial architecture
 - (c) Neo-Classical architecture
 - (d) Victorian – Gothic Revival architecture
-

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

Space for rough work

	INDIAN SPACE RESEARCH ORGANISATION	SET A
	Recruitment Entrance Test for Scientist/Engineer 'SC' 2017	

Space for rough work