 भारतीय अंतरिक्ष अनुसंधान संगठन	INDIAN SPACE RESEARCH ORGANISATION	<b>SET B</b>
	Recruitment Entrance Test for Scientist/Engineer 'SC' - 2015	

1. Match the temples in Group I with their distinguishing features in Group II.
- | Group I                             | Group II                        |
|-------------------------------------|---------------------------------|
| P. Sun Temple, Konarak              | 1. Kalinga architecture style   |
| Q. Madurai Meenakshi Amman Temple   | 2. Hoysala architecture         |
| R. Chennakesava Temple, Somnathpura | 3. Thousand pillared hall       |
| S. Lingaraj Temple, Bhubanesvar     | 4. Ornamented chariot           |
|                                     | 5. Badami Chalukya architecture |
- (a) P-4, Q-3, R-2, S-1                      (b) P-5, Q-3, R-4, S-2  
 (c) P-4, Q-2, R-5, S-1                      (d) P-1, Q-2, R-4, S-3
2. Mark the wrong statement
- (a) CPM uses activity oriented network  
 (b) In PERT deterministic concept is used  
 (c) CPM is extensively used in construction projects  
 (d) In PERT, estimate of time for activities are not so accurate and definite
3. Dummy activity in PERT / CPM network is necessary when
- (a) Two activities have same ending node  
 (b) Two activities have same starting node  
 (c) When two activities share the same starting and ending node  
 (d) None of the above
4. While estimating, centre line method is specially adopted for
- (a) Hexagonal buildings                      (b) Rectangular buildings  
 (c) Circular buildings                          (d) All the above
5. Plinth area of the building does not include
- (a) Lift well, staircase and corridor area    (b) Area of walls at the floor level  
 (c) Toilet and balcony area                      (d) Area of cantilevered porch
6. In AUTOCAD, to draw perspective, which grid is used?
- (a) Rectangular                                      (b) Pro-optic  
 (c) Isometric                                        (d) Parametric



7. As per NBC 2005, match the statements about open space requirements in group I, with true or false in group II :

Group I	Group II
P. The open space around the institutional building shall not be less than 12 m	1. True
Q. The open space around the industrial building shall not be less than 4.5 m for heights upto 16 m	2. False
R. The minimum width of the inner courtyard shall be 3.0 m	
S. For buildings of more than 30 m height, the size of the ventilation shaft shall not be less than 5.4 m <sup>2</sup> area	

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


8. Match the statements about colour wheel in group I with True or False in group II :

Group I	Group II
P. Red, Blue and Yellow are primary colours	1. True
Q. Orange, Green and Violet are secondary colours	2. False
R. Warm colours convey calmness and peace while cool colours exhibit energy and joy	
S. Blue and Orange or Red and Green are complementary colours	

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


9. In Flemish bond brick work

- (a) Each course consists of alternating stretchers and headers  
(b) Every second course consists of alternating stretchers and headers  
(c) Alternate course of headers and stretchers  
(d) All the bricks are laid as headers on the faces


	INDIAN SPACE RESEARCH ORGANISATION	<b>SET B</b>
	Recruitment Entrance Test for Scientist/Engineer 'SC' - 2015	

10. Tool for measuring and rating environmental performance of building in Indian context is
- (a) LEED (b) TERI  
(c) GRIHA (d) ECBC
11. In Munsell colour system the purity of colour is described by
- (a) Chroma (b) Tone  
(c) Hue (d) Value
12. Glazing supported by steel frame work independent of building columns are called
- (a) Curtain wall glazing (b) Screen wall glazing  
(c) Structural glazing (d) Obscured glass glazing
13. Buildings which can respond to nature / outdoor environment by computer management systems to optimize the energy are called
- (a) Hi-tech buildings (b) Intelligent buildings  
(c) Green buildings (d) Zero energy buildings
14. The shape of the bending moment diagram having no external load is always
- (a) Parabolic (b) Circular  
(c) Cubical (d) Linear
15. A simply supported beam of span  $L$  carries a concentrated load  $W$  at its mid span, the maximum bending moment  $M$  is
- (a)  $WL/4$  (b)  $WL/8$   
(c)  $WL/16$  (d)  $WL/2$



	INDIAN SPACE RESEARCH ORGANISATION	<b>SET B</b>
	Recruitment Entrance Test for Scientist/Engineer 'SC' - 2015	

16. The author of "Design with Nature" book is
- (a) Philip Jodidio (b) Christopher Alexander  
(c) Robert Venturi (d) Ian L. McHarg
17. The term Cohort in urban planning refers to
- (a) Land use classification of residential and institutional areas  
(b) Terrain mapping  
(c) Age and sex classification of population  
(d) Set of planning regulations
18. Which one of the following is the best example for Skyway system (inter linked collection of enclosed pedestrian foot bridges)?
- (a) Minneapolis, USA  
(b) Board walk, Atlantic city  
(c) Curitiba, Brazil  
(d) Broadway Theatre District, New York
19. In which type of climate, walls with high thermal inertia are found to be more suitable?
- (a) Cold climate  
(b) Temperate climate  
(c) Hot humid climate  
(d) Hot-dry climate
20. Which one of the following would be most suitable for a high rise building in a high risk Seismic zone?
- (a) A building with L-shaped configuration  
(b) A building with a symmetrical square shaped configuration  
(c) A building with a T-shaped configuration  
(d) A building on stilts

	<b>INDIAN SPACE RESEARCH ORGANISATION</b>	<b>SET B</b>
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21. First town planner and inventor of orthogonal urban layout is

- |                |                    |
|----------------|--------------------|
| (a) Hippodamus | (b) Dinocrates     |
| (c) Aristotle  | (d) Daniel Burnham |

22. Match the ancient town classification in Group I with their layout plan details in Group II :

Group I

P. Dandaka

Q. Karmuka

R. Padmaka

S. Swastika

Group II

1. The pattern of the plan resembles the petals of the lotus radiating outwards from the centre. City used to be practically an island surrounded by water.
  2. Contemplates diagonal streets dividing the site into rectangular plots. A rampart wall surrounds the town with moat at its foot filled with water.
  3. Suitable for the place where the site of the town is in the form of a bow or semi circular or parabolic, mostly applied for towns located on sea shore or river banks.
  4. Streets are straight and cross each other at right angles at the centre. Village has 4 gates on 4 sides, and is rectangular or square.
- |                        |                        |
|------------------------|------------------------|
| (a) P-3, Q-1, R-4, S-2 | (b) P-4, Q-3, R-1, S-2 |
| (c) P-2, Q-1, R-3, S-4 | (d) P-1, Q-2, R-4, S-3 |

23. In master plan, topography is considered to be the most important criteria while routing which one of the following service lines?

- (a) Natural gas
- (b) Telephone and electrical power cables
- (c) Water supply line
- (d) Storm water and sewer line

24. Match the botanical names of plants in Group I with their respective plant types in Group II :

Group I

- P. Hibiscus rosa sinensis  
 Q. Solanum jasminoides album  
 R. Ficus religiosa  
 S. Geranium sanguineum

Group II

1. Tree  
 2. Ground cover  
 3. Shrub  
 4. Climber  
 5. Hedge

- (a) P-1, Q-3, R-2, S-5  
 (c) P-5, Q-2, R-3, S-4

- (b) P-3, Q-4, R-1, S-2  
 (d) P-3, Q-5, R-1, S-4

25. Match the historical garden styles in Group I with their corresponding characteristic features in Group II.

Group I

- P. Japanese gardens  
 Q. Persian gardens  
 R. Egyptian gardens  
 S. English landscape gardens

Group II

1. Gardens for secular, attached to temple gardens, mainly utilitarian  
 2. Traditional gardens, create miniature idealised landscapes, highly abstract and stylised way  
 3. To create an idyllic pastoral landscape, view of nature, included lakes, sweeps of gently rolling lawns, gothic ruins, bridges etc.,  
 4. Gardens were typically divided into quadrants by channels of water, punctuated by geometrically shaped basins

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


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

26. Time required for the sound to decay to 60 dB is called


- (a) Delay time  
 (c) Reverberation time

- (b) Transient time  
 (d) Echo time




	INDIAN SPACE RESEARCH ORGANISATION	<b>SET B</b>
	Recruitment Entrance Test for Scientist/Engineer 'SC' - 2015	

27. Architectural light shelf is
- A shelf where in electrical light fixtures are arranged in a way to uniformly illuminate the room
  - A horizontal surface that reflects day light deep into a building
  - A horizontal surface that prevents solar radiation into a building
  - A horizontal surface that prevents entry of bright natural day light into a building
28. Which of the following lamp gives nearly monochromatic light?
- Sodium vapour lamp
  - GLS lamp
  - Tube light
  - Mercury vapour lamp
29. Under the influence of fluorescent lamps sometimes the wheels of rotating machinery appear to be stationery. This is due to
- Luminescence effect
  - Low power factor
  - Fluctuation effect
  - Stroboscopic effect
30. Excessive misdirected, obtrusive artificial lighting is called
- Light pollution
  - Photo pollution
  - Luminous pollution
  - All the above
31. Ground water is usually free from
- Dissolved impurities
  - Both suspended and dissolved impurities
  - Suspended impurities
  - None of the above

	INDIAN SPACE RESEARCH ORGANISATION	<b>SET B</b>
	Recruitment Entrance Test for Scientist/Engineer 'SC' - 2015	

32. The type of grade separator generally preferred for the movement of vehicles at an intersection of two roads, without any interference is
- (a) Trumpet (b) Diamond interchange  
(c) Clover leaf (d) Delta
33. Choose the word closest in meaning to replace the word OSTENSIBLE
- (a) Blatant (b) Insidious  
(c) Apparent (d) Ostentatious
34. Fill in the blank with the most appropriate word :  
He was \_\_\_\_\_ success and eager to create a name for himself.
- (a) Sated by (b) Impassive to  
(c) Conceited to (d) Impatient for
35. From the following options choose the correct alternative that best explains the idiom, "Writing on the wall"
- (a) Obvious truth (b) Foreboding  
(c) Prediction (d) Graffiti
36. X can finish a work in 30 days, Y can finish a work in 12 days and Z can finish a work in 15 days. Y and Z start the work, but are forced to leave after 3 days. The remaining work was done by X in how many days?
- (a) 9 days (b)  $16\frac{1}{2}$  days  
(c)  $8\frac{1}{2}$  days (d)  $18\frac{1}{2}$  days
37. In a textile show room, the profit margin is 250% of the cost. If the cost increases by 30%, but the selling price remains constant, then what percentage of the selling price is the profit?
- (a) 55% (b) 62.85%  
(c) 69.25% (d) 72.35%



	INDIAN SPACE RESEARCH ORGANISATION	<b>SET B</b>
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38. Which one of the following is the characteristic feature of the Dravidian style of Temple architecture?
- (a) Mandapa (b) Cupola  
(c) Curvilinear Shikara (d) Vimana
39. Which one of the following is the oldest Stupa?
- (a) Stupa of Piprawah (b) Stupa of Bharahut  
(c) Stupa of Sanchi (d) Stupa of Amaravati
40. In classical Greek architecture, name the top step of the stepped platform upon which colonnades of temple columns are placed?
- (a) Crepidoma (b) Base  
(c) Stylobate (d) Stereobate
41. Name the architect who envisioned the "Broad Acre City" concept for the future and advocated "Organic Architecture" principles.
- (a) Frank Lloyd Wright (b) Alvar Alto  
(c) Eero Saarinen (d) Le-Corbusier
42. Match the architects in Group I with their works in Group II :
- |  |   |
|--|---|
| <p>Group I</p> <p>P. Eero Saarinen</p> <p>Q. Balakrishna V Doshi</p> <p>R. Charles Correa</p> <p>S. Le-Corbusier</p> | <p>Group II</p> <p>1. United Nations Head Quarters<br/>New York city</p> <p>2. IUCAA Campus, Pune.</p> <p>3. TWA Terminal, New York.</p> <p>4. IIM Campus, Bengaluru.</p> |
|--|---|
- (a) P-2, Q-3, R-1, S-4  
(b) P-3, Q-4, R-2, S-1  
(c) P-3, Q-2, R-4, S-1  
(d) P-1, Q-4, R-2, S-3



43. Which one of the following command is used in AUTOCAD, to create one solid model from two or more separate solid shapes?
- (a) Add parts tool (b) Join  
(c) Subtract (d) Union
44. As per NBC 2005, what will be the minimum area and the minimum width of the kitchen where separate dining area is provided?
- (a) Area shall not be less than 4.00 m<sup>2</sup>, with a minimum width of 1500 mm.  
(b) Area shall not be less than 7.50 m<sup>2</sup>, with a minimum width of 2100 mm.  
(c) Area shall not be less than 5.00 m<sup>2</sup>, with a minimum width of 1800 mm.  
(d) Area shall not be less than 6.00 m<sup>2</sup>, with a minimum width of 2000 mm.
45. As per NBC 2005, for institutional buildings like hospitals, what will be the minimum width of the stair case, minimum width of the tread and maximum height of riser?
- (a) Minimum width of staircase – 1500 mm, minimum width of tread – 250 mm and maximum height of riser – 190 mm.  
(b) Minimum width of staircase – 2000 mm, minimum width of tread – 300 mm and maximum height of riser – 150 mm.  
(c) Minimum width of staircase – 2000 mm, minimum width of tread – 250 mm and maximum height of riser – 170 mm.  
(d) Minimum width of staircase – 2500 mm, minimum width of tread – 300 mm and maximum height of riser – 150 mm.
46. As per NBC 2005, match the statements about fire and life safety in group I, with true or false in group II.
- | Group I  | Group II |
|--|----------|
| P. For buildings more than 24 m high, refuge area shall be provided  | 1. True  |
| Q. Walls of lift enclosures shall have a fire rating of one hour   | 2. False |
| R. For high rise buildings, above 30 m in height, provision for helipad must be made                         |          |
| S. Automatic sprinklers shall be installed in basements used as car parks if area exceeds 200 m <sup>2</sup> |          |
- (a) P-1, Q-1, R-1, S-2 (b) P-2, Q-1, R-2, S-2  
(c) P-1, Q-2, R-2, S-1 (d) P-1, Q-2, R-1, S-1





