Question Booklet Alpha Code



Total Number of Questions : 100

Time : 75 Minutes

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

- 1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A**, **B**, **C** & **D**.
- 2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.
- 3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
- 4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
- 5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.
- 6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.
- 7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
- 8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.
- 9. Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.
- 10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
- 11. Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.
- 12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
- 13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

Question Booklet SI. No

1.	1. The ratio of the length of the drawing to the actual length of the object is					
	A) Representative Fraction		B) Diagonal Scale			
	C) Vernier Fraction		D)	Refraction Index		
2	A conic section which	h have only one direct	trix i	S		
۷.	A) Circle	B) Hyperbola	C)	Parabola	D) Ellinse	
		D) Hyperbola	0)	T drubblu		
3.	Rapid hardening Por content of	tland cement having q	uicł	crate of gain of str	ength due to higher	
	A) Tricalcium Silicate	е				
	B) Dicalcium Silicate	9				
	C) Tricalcium Alumir	nates				
	D) Tetracalcium Alui	minates				
4	The property of incre	ase in volume of fine	auu	regate due to moi	sture is called	
	A) Slacking	B) Bulking	C)	Warping	D) Shrinking	
	y clacking	D) Daning	0)	Walping	D) Chining	
5.	Good brick earth this	s constituent imparts p	last	icity to the earth it	can be moulded	
	A) Lime	B) Alumina	C)	Silica	D) Oxide of Iron	
6.	It is the liquid substa	nce which hold the ing	gred	lient of paint in liqu	uid suspension	
	A) Base		B)	Driers		
	C) Vehicles		D)	Colouring Pigme	nts	
7.	In chemical classifica	ation of rock. marble is	s kn	own as		
	A) Siliceous rock		B)	Metamorphic roc	k	
	C) Calcareous rock		D)	Argillaceous rock	< c	
0	The sum of the still	and the line of the set of the set	, 	-	-in is to may all a s	
8.	The process of heati	ng the limestone to re	ane		air is termed as	
	A) Calcinations		B)	Slacking of lime		
	C) Fat lime		D)	Water lime		
9.	The portion from wh trunk and dark rings	ich the branches is re which are known as	emo	ved receives nou	rishments from the	
	A) Knots	B) Ring galls	C)	Medulla	D) Pith	

Α

10. It indicate the loss of water	. It indicate the loss of water penetrated into the soil it may join some underground water				
A) Transpiration	B)	Surface runoff			
C) Percolation	D)	Infiltration			
11. For potable water, the amo	ount of chloride shou	uld not exceed			
A) 225 ppm B) 2	275 ppm C)	150 ppm	D) 250 ppm		
12. The theoretical time taken setting tank is known as	by a particle of wate	er to pass between	entry and exit of a		
A) Detention period	B)	Settling period			
C) Period of penetration	D)	Falling period			
13. The valve is an automatic	device which allows	water to go one d	irection only		
A) Relief valve	B)	Sluice valve			
C) Scour valve	D)	Reflex valve			
14. The term used to indicate	the waste water fror	n bathroom, kitche	en etc.		
A) Night-soil	B)	Raw sewage			
C) Sullage	D)	Septic sewage			
15. It is constructed to provide low level main sewer with	e a connection betw a minimum amount	een the high level of disturbances	branch sewers to		
A) Drop Manhole B) M	Manhole C)	Catch Basin	D) Inlet		
16. Amount of oxygen required solids in sewage under ae	d to carrying out the l probic condition at sta	piological decompo andard condition	osition of dissolved		
A) Dissolved oxygen					
B) Chemical oxygen dema	and				
C) Biochemical oxygen de	emand				
D) Oxygen demand					
17. The term is used to indic presence of abundant oxy	ate the sludge whic gen	h is obtained by s	settling sewage in		
A) Activated Sludge	B)	Aeration			
C) Diffusers	D)	Mechanical Aerat	ion		

- 18. The quantity of liquid waste which flows in sewers during the period of rainfall is known as
 - A) Outfall sewage B) Septic sewage
 - C) Chemical sewage D) Storm sewage
- 19. What is the minimum amount of DO required for the survival of aquatic animals ?
 - A) 8 mg/l B) 12 mg/l C) 2 mg/l D) 4 mg/l
- 20. The length of a surveyor's chain is
 - A) 33ft B) 60ft C) 66ft D) 100ft
- 21. The meridian through a point is the line in which a plane, passing that point and the north and south poles, intersection with surface of the earth
 - A) Magnetic meridian
 - B) Arbitrary meridian
 - C) True meridian
 - D) Magnetic bearing
- 22. Convert the angle 327°24'00" to Quadrantal bearing
 - A) N 32°36′00″W B) N 57°24′00″W
 - C) S 32°36′00″E D) S 57°24′00″E
- 23. The process of determining the plotted position of the station occupied by the plane table, by means of sight taken towards known point, location of which have been plotted
 - A) Intersection B) Orientation
 - C) Radiation D) Resection
- 24. It is the method of direct leveling the object of which is solely to determine the difference in two point regardless of the horizontal position of the point with respect of each other
 - A) Profile leveling
 - B) Reciprocal leveling
 - C) Precise leveling
 - D) Fly leveling

- 25. Contour lines of different elevation can intersect only in the case of
 - A) Vertical cliff B) Overhanging cliff
 - C) Uniform surface D) Hill
- 26. It is the line passing through the intersection of the horizontal and vertical cross hairs and optical centre of the object glass and its continuation
 - A) Axis of the level tube B) Horizontal axis
 - C) Line of collimation D) Axis of collimation
- 27. An angle is measured two or more times by allowing the vernier to remain clamped each time at the end of each measurement instead of setting it back at zero when sighting at the previous station
 - A) Repetition method
 - B) Reiteration method
 - C) Direction method
 - D) Direct angle method
- 28. It is a combination of an electronic theodolite and an electronic distance meter
 - A) Geodimeter B) Distomat
 - C) Total station D) Tellurometer
- 29. A small pocket instrument used for measuring horizontal and vertical angle
 - A) Box sextant B) Pantograph
 - C) Clinometer D) Hand level
- 30. When the vertical circle of a theodolite is on the right side of the observer, the position is
 - A) Face left B) Changing face
 - C) Swinging D) Face right
- 31. In an open traverse the included angle at a station is 209°16′00″, deflection angle at that point is

A)	29°16′00″	B)	59°44′00″
C)	150°44′00″	D)	318°16′00″

A

- 32. Which method is used for balancing the traverse when angular and linear measurements are equally precise ?
 - A) Bowditche's rule B) Transit rule
 - C) Sine rule D) Cosine rule
- 33. Point where alignment changes from curve to straight
 - A) Point of curve B) Point of intersection
 - C) Point of tangency D) Reverse curve
- 34. The process of collecting information about an object or an area without being the direct contact
 - A) Geographical information system
 - B) Global positioning system
 - C) Remote sensing
 - D) Astronomical survey
- 35. The value of the strength of the material below which not more than 5 percent of the test results are expected to fall
 - A) Allowable strength
 - B) Working strength
 - C) Maximum strength
 - D) Characteristic strength
- 36. In limit state of flexure the maximum strain in concrete at the outermost compression fiber in bending is taken as

A) 0.0035	B)	0.00035	C) 0.002	D)	0.035
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37. The maximum spacing of shear reinforcement measured along the axis of the member should not exceed

A) 350 mm B) 450 mm C) 400 mm D) 380 mm

38. The strength of a compression member with helical reinforcement the strength of similar member with lateral ties is

A) 1.50 times	B) 1.05 times
C) 1.15 times	D) 1.10 times

39.	The member subjected to torsion shall be designed for fictitious shear which is function of the actual shear and torsion				
	A) Critical shear		B) Equivalent shear		
	C) Theoretical shear	r	D) Design shear		
40.	Minimum size of long	gitudinal bars in a colu	ımn shall be		
	A) 10 mm	B) 12 mm	C) 16 mm	D) 8 mm	
41.	In RCC retaining wall	extra bars provided to	satisfy the bearing pre	ssure are known as	
	A) Torsion bars		B) Dowel bars		
	C) Anchor bars		D) Main bars		
42.	The minimum elonga	ation percentage on s	tandard gauge of mild	steel is	
	A) 32%	B) 25%	C) 20%	D) 23%	
43.	A member if a truss	which is under compr	essive force is known	as	
	A) Tie		B) Collar		
	C) Strut		D) Beam		
44.	Distance from centre	e of bolt-hole to the ne	arest edge is known a	as	
	A) Throat thickness		B) Edge distance		
	C) Throat distance		D) Pitch distance		
45.	Minimum pitch of bol	Its shall not be less th	an		
	A) 1.7d	B) 1.5d	C) 2.5d	D) 2.7d	
46.	Least value of design known as	n strength of bolt in b	earing, design strengt	h of bolt in shear is	
	A) Shear value		B) Gauge value		
	C) Bolt value		D) Edge value		
47.	The member of a rok known as	oof truss subjected to	transverse load and	rest on rafters are	
	A) Cleat		B) Rafter		
	C) Tie beam		D) Purlins		

Α

- 48. To minimize the wind forces on the roof, the slope of the roof in degrees should not exceed
 - A) 30° B) 25° C) 27° D) 32°

49. The ratio of lateral strain to axial strain is a constant for a homogeneous material

- A) Poisson's ratio B) Shear modulus
- C) Bulk modulus D) Young's modulus
- 50. The maximum energy stored at elastic limit of a material is known as
 - A) Resilience
 - B) Bulk resilience
 - C) Proof resilience
 - D) Modulus of resilience
- 51. A simply supported beam of span '*l*' carries a uniformly distributed load 'w' per unit length, the maximum BM at the midpoint will be
 - A) $wl^2/8$ B) $wl^2/4$
 - C) $wl^{3}/8$ D) $wl^{2}/6$
- 52. The shear stress in a circular shaft of radius 'r' subjected to torsion, is maximum at a point
 - A) At centre of the shaft
 - B) At a distance of 'r/2' from centre of the shaft
 - C) At a distance of 'r/ π ' from centre of the shaft
 - D) At the surface of the shaft
- 53. Modulus of section 'z' of hollow circular section with external diameter 'D' and internal diameter 'd' will be

A)	$\pi/32d(D^4 - d^4)$	B) $\pi/32D(D^4 - d^4)$
C)	$\pi/32(D^3-d^3)$	D) $\pi/32D(D^3 - d^3)$

- 54. A circular column of diameter 'd' under any load will have compressive stress throughout the section of the load act within concentric circle known as core, of diameter
 - A) d/8 B) d/3 C) d/2 D) d/4

Α

- 55. Euler's crippling load for a column of length 'l' with both ends fixed is
 - A) $\pi 2 E I/L^2$ B) $\pi^2 E I/4 L^2$
 - C) $4\pi^2 EI/L^2$ D) $\pi 2 EI/\sqrt{2L^2}$

56. A fixed beam of span 'L' is loaded with central point load 'W'. The BM at centre will be

- A) WL/8 B) WL/16 C) WL/4 D) WL/6
- 57. Maximum deflection at free end of a cantilever of span '*l*' under a uniformly distributed load of 'w' per unit length is given by
 - A) $wl^4/8EI$ B) $wl^4/3EI$ C) $wl^4/2EI$ D) $wl^4/4EI$
- 58. The tendency of a material to fracture without appreciable deformation is called
 - A) DuctilityB) MalleabilityC) ToughnessD) Brittleness
- 59. When a body is fully immersed in water, the point through which the resultant pressure act is known as
 - A) Total pressure B) Centre of pressure
 - C) Gauge pressure D) Absolute pressure
- 60. A flow in which the velocities of liquid particles at all section of the pipe or channel are equal is called
 - A) Uniform flow B) Steady flow
 - C) Streamline flow D) Compressible flow
- 61. It is an instrument to determine the velocity at required point in the flowing stream
 - A) Venturi meter B) Orifice meter
 - C) Pitot tube D) Viscosity meter
- 62. It is a velocity at which the flow changes laminar flow to the turbulent flow
 - A) Inlet velocity B) Velocity of flow
 - C) Critical velocity D) Uniform velocity

- 63. It is a tank is also provided just on the upstream of the power to control the pressure variation and eliminate the effect of water hammer
 - A) Surge tank B) Flushing tank
 - C) Overhead tank D) Orifice tank
- 64. I is the ratio of inertia force to the gravity force
 - A) Froude's number B) Reynolds's number
 - C) Mach's number D) Euler's number
- 65. It is defined as the fall of moisture from the atmosphere to the earth surface in any form
 - A) Transpiration B) Runoff
 - C) Percolation D) Precipitation
- 66. The permeable formation having structure which permits appreciable quantity of water to move through them under ordinary field condition
 - A) Aquiclude B) Aquifuge
 - C) Specific yield D) Aquifer
- 67. It is the overflow portion of dam, over which surplus discharge flow from the reservoir to the down stream
 - A) Spillway
 - B) Diversion head works
 - C) Weir
 - D) Regulator works
- 68. An embankment protected on all sides by stone or concrete block, built at right angle to the axis of the weir separation of the weir and the under sluices
 - A) Wing wall B) Barrage
 - C) Groyne D) Abutment
- 69. The crops which cannot normally be grown without irrigation water are called
 - A) Wet crops B) Dry crops
 - C) Perennial crops D) Seasonal crops

- 70. The relation between the area irrigated and the quantity of water used is expressed as
 - A) Duty B) Delta
 - C) Base period D) Crop period
- 71. The amount of water stored in river channel without any artificial storage is known as the
 - A) Dam B) Diversion dam
 - C) Valley storage D) Dead storage
- 72. The area of the land which drain into the stream of reservoir is called
 - A) Cultivated area B) Commanded area
 - C) Reservoir area D) Catchment area
- 73. Canal normally used for diversion or flood water of river is
 - A) Contour canal
 - B) Ridge canal
 - C) Perennial canal
 - D) Inundation canal
- 74. It is defined as the slope of the line joining the crown and the edge of the surface
 - A) Camber B) Super elevation
 - C) Gradient D) Carriage way
- 75. The solution of bitumen, asphalt or coal tar in solvents is
 - A) Emulsion B) Cut backs
 - C) Bitumen macadam D) Sheet asphalt
- 76. It is a safety island and serves the dual purpose of affording the protection to the pedestrians and segregating the traffic into the proper channel
 - A) Refuge island
 - B) Traffic island
 - C) Turbine island
 - D) Multiple junction

- 77. The pavement which can resist tensile stresses and having very little resistance to deformation under the wheel load
 - A) Flexible pavement
 - B) WBM pavement
 - C) Shoulder pavement
 - D) Rigid pavement
- 78. The longitudinal movement of the rails in a track due to various reasons
 - A) Creeping of rails B) Derailment
 - C) Leed rails D) Hogged rails
- 79. Clear horizontal distance between inner face of two rails forming the track at the top is
 - A) Gauge B) Sleeper density
 - C) Rail length D) Packing space
- 80. Arrangement to divert train from one track to another is known as
 - A) Turn out B) Crossing
 - C) Curves D) Suspended joint
- 81. Station which are meant only for the control of the track is called
 - A) Terminals B) Flag station
 - C) Junction D) Cabin station
- 82. Paved surface used for landing and take-off of aircraft is known as
 - A) Rolling B) Taxiway
 - C) Apron D) Runway
- 83. Upstream nose of a bridge pier shaped for easy and smooth flow of water through it is known as
 - A) Easy water
 - B) Clearance water
 - C) Cut water
 - D) Free water

- 84. The supports provided to the super structure of the bridge at the abutments and piers allowing free longitudinal or angular movements to the main girders or trusses of bridge
 - A) Railing B) Free board
 - C) Clearance D) Bearings
- 85. A bridge having maximum span 6 m is called
 - A) Minor bridge B) Major bridge
 - C) Culvert D) Straight bridge
- 86. The formal approval by the department concerned of the project proposal for incurring the expenditure on a work initiated is
 - A) Technical sanction
 - B) Government sanction
 - C) Administration sanction
 - D) Expert committee sanction
- 87. Determination of rate of an item of work from quantities of materials and labours are and their cost is

A) Supplementary rate	B) Revised rate
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- C) Detailed rate D) Analysis of rate
- 88. The total area of floor in between walls and consists of floor of all rooms, verandahs, passages, corridors etc. are known as
 - A) Carpet area B) Plinth area
 - C) Floor area D) Circulation area
- 89. One cubic meter of Portland cement weights
 - A) 1400 kg
 B) 1440 kg

 C) 1540 kg
 D) 1340 kg
 - e, ieieiig
- 90. The term used to denote the gradual reduction in the useful life of the asset is
 - A) Annual depreciation B) Capital depreciation
 - C) Depreciation D) Sinking fund

91.	. The value at the end of the utility period without being dismantled					
	A) Scrap value		B) Salvage value			
	C) Book value		D) Market value			
92.	The capacity of doir work per day is know	ng work by an artisan o wn as	or skilled labour in the form of quantity of			
	A) Out tern work		B) Over out turn wo	vrk		
	C) Present turn wor	k	D) In tern work			
93.	The expected out te	rn of cement concrete	1:2:4 per mason p	er day is		
	A) 4.5 m ³	B) 5.0 m ³	C) 5.5 m ³	D) 6 m ³		
94.	The drafting setting vertical direction is	used to constrain the	movement of cursor	either horizontal or		
	A) SNAP command		B) O-SNAP comma	Ind		
	C) Ortho command		D) GRID command			
95. The command used to set drawing boundaries in AUTO CAD is						
	A) Areas	B) Boundaries	C) Drafting	D) Limits		
96.	Volume right cone h	aving 20 cm base dia	meter and 15 cm heig	ht		
	A) 1470 cm ³	B) 1570 cm ³	C) 1670 cm ³	D) 1750 cm ³		
97.	97. The price Rs. 100 of an object is increased twice 10% then the present price is					
	A) 112	B) 121	C) 122	D) 120		
98.	Set back distance re	equired at rear of a bui	ilding is			
	A) 1.25 m	B) 1.50 m	C) 1.75 m	D) 2.00 m		
99.	Minimum area of ba	throom with water clos	set			
	A) 2.1 m ²	B) 2.25 m ²	C) 2.5 m ²	D) 2.65 m ²		
100.	Minimum width of tre	ead without nosing in	residential building is			
	A) 22.50 cm	B) 25.00 cm	C) 20.00 cm	D) 30.00 cm		

Space for Rough Work