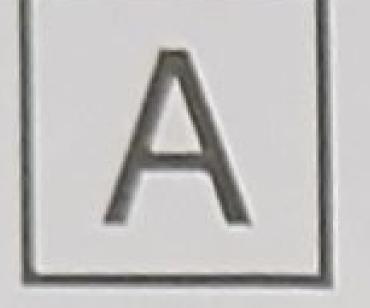
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Ph.D-EE-December, 2024 Civil Engineering

		Sr. No
Time: 11/4 Hours	Max. Marks: 100	Total Questions: 100
Roll No. (in figures)	(in words)	
Name	Date of Birth	
Father's Name	Mother's Name	
Date of Examination		
(Signature of the Candidate)		(Signature of the Invigilator)

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P. T. O.

	1.	The degree of static	c indeterminacy of a	rigid	l-jointed space fr	ame is:	
		(1) $m + r - 2j$	(2) $m + r - 3j$		3m + r - 3j	(4) 6m + r $-$ 6j	
	2.	2. Which of the following are indeterminate structures?					
		(1) 3-hinged arch			Continuous Bea	am	
		(3) Redundant fran	ne	(4)	Both (2) and (3		
	3.	The stress carried b	y the King-Post of a	Kin	g-Post roof truss	is:	
		(1) Tensile		(2)	Compressive		
		(3) Tensile and Be	nding	(4)	Compressive ar	nd Bending	
	4.	Match the following	g:				
		List I		Lis	st II		
		P. Slope deflection	n method	I.	Force Method		
		Q. Moment distrib	ution method	Π.	Displacement N	Iethod	
		R. Method of three	emoments				
		S. Castigliano's se	cond theorem				
		(1) P-I, Q-II, R-I, S	-11	(2)	P-I, Q-I, R-II, S	-II	
		(3) P-II, Q-II, R-I, S	S-I	(4)	P-II, Q-I, R-II,	S-I	
	5.	For the administration	on of road transport,	a M	otor Vehicle Act	was enacted in:	
		(1) 1927	(2) 1934	(3)	1939	(4) 1947	
	6.	The Muller-Breslau	principle is the strai	ght a	application of:		
		(1) Kani's theorem		(2)	Maxwell recipro	ocal theorem	
		(3) Moment area mo	ethod	(4)	Unit load metho	od	
	7.	In conjugate beam, t	he loading is equal t	o:			
		1) Shear force diag					
		2) Bending momen	t diagram of actual l	bean	1		
	(3) Loading of actua	l beam				
	(4) M/EI diagram of	actual beam				
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made to one litre. The atomic weights of H and CI are 1 and 35.5, respectively. Neglecting the dissociation of water, the pH of the solution, is:

(1) 2.50

(2) 3.50

(3) 2.01

(4) 3.01

15. A highway designed for 80 km/h speed has a horizontal curve section with radius 250 m. If the design lateral friction is assumed to develop fully, the required super elevation is:

(1) 0.02

(2) 0.05

(3) 0.09

(4) 0.07

P. T. O.

16.	As per IS 456: 200	0. the pH value of w	ater	for concrete mix	shall not be less than:
	(1) 4.5	(2) 6.0		5.5	(4) 5.0
17.	Wind blown silt ha	ving little or no strati	ficat	ion is called:	
	197 77 9	(2) Drift		Peat	(4) Loess
18.	The ratio of lateral	strain to linear strain	is kı	nown as :	
	(1) Modulus of ela			Modulus of rigi	dity
	(3) Poisson's ratio			Elastic limit	
19.	A glass rod have a bulk modulus (in C		90 (GPa and Poisson	's ratio of 0.2 will have its
	(1) 50	(2) 108	(3)	270	(4) 91
20.		rted beam of span L on under the load wil			W at the mid span, then
	(1) WL ³ /3EI	(2) WL ³ /8EI	(3)	WL ³ /48EI	(4) 5/384.WL ³ /3EI
21.	The minimum pitch	h of the rivet shall no	t be	less than:	
	(1) d	(2) 1.5d	(3)	2.0d	(4) 2.5d
22.	The structural desidesidesign loads is:	gn method that does	not	take into accour	it the safety factors on the
	(1) working stress	method	(2)	load factor met	hod
	(3) ultimate load n		(4)	limit state meth	od
23.	The type of bond headers is called:	in a brick masonar	y co	ntaining alternat	te course of stretcher and
	(1) Flemish bond	(2) English bond	(3)	Stretched bond	(4) Header bond
24.	During the process content in cement	of hydration of ceme	ent, c	lue to increase in	Dicalcium Silicate 2 (CS)
	(1) increases				ses and then increases
	(3) does not change	C	(4)	decreases	
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25.	PERT technique of network analysis is n	nainly useful for:
	(1) Small projects	(2) Large and complex projects
	(3) Research and development project	(4) Deterministic activities
26.	Critical Path Method (CPM) network is:	
	(1) Activity oriented	(2) Event oriented
	(3) Both activity as well as event oriented	(4) None of these
27.	Slack in a PERT network refers to:	
	(1) Activity	(2) Event
	(3) Dummy Activity	(4) None of the above
28.	The type of foundation suitable for under	r-water structure is:
	(1) cast-in-situ concrete piles	(2) continuous footing
	(3) pier foundation	(4) stepped foundation
29.	Which of the following represents hardes	st grade of bitumen ?
	(1) 30/40 (2) 60/70	(3) 80/100 (4) 100/120
30.	The relation between modulus of ruptur (f _{ck}) is	e (f _{cr}) and characteristic compressive strength
	(1) $f_{cr} = 0.7 f_{ck}$ (2) $f_{cr} = 0.7 \sqrt{f_{ck}}$	(3) $f_{cr} = 0.75 f_{ck}$ (4) $f_{cr} = 0.7/f_{ck}$
31.		approach at an intersection with the signation considered from the fourth or fifth headway
	(1) intersection headway	(2) saturation headway
	(3) effective headway	(4) discharge headway
32.	The average density of earth may be take	en as:
	(1) 5.51 g/cc	(2) 5.51 kg/cc
	(3) 3.9 g/cc	(4) 3.9 kg/cc
33.	Soil deposit formed due to transportation	by wind is termed as:
	(1) aeolian deposit	(2) lacustrine deposit
	(3) alluvial deposit	(4) estuarine deposit

34.	Water losses in water supply is assumed	las:	
	(1) 5% (2) 7.5%	(3) 10%	(4) 15%
35.	The smallest sieve size according to Ind	ian standards is :	
	(1) 0.0045 mm (2) 0.045 mm	(3) 0.45 mm	(4) 0.154 mm
36.	A body floating in a liquid is in a stable (1) Metacentre lies above its centre of g (2) Metacentre lies below its centre of g (3) Metacentre coincides with its centre (4) Centre of gravity is below its centre	gravity gravity of gravity	if its:
37.	What is the recommended shape of cam (1) Straight (2) Parabolic (3) Straight at edges and parabolic in m (4) Parabolic at edges and straight at m	iddle	
38.	Assumptions made in the Terzaghi's con (1) Soil is saturated (2) Compression is one dimensional (3) The coefficient of permeability is con (4) All of the above		
39.	Which one of the following products glucose? (1) CO ₂ (2) CH ₄	is not obtained in a (3) HS ₂	naerobic decomposition of (4) H ₂ O
	Consider the statements P and Q related P: When a rough retaining wall in force/resistance mobilizes in upward Q: Most of the earth pressure theories neglecting the actual distribution of Which one of the following options is 0. (1) Both P and Q are TRUE (3) Both P and Q are FALSE	noves toward the body direction along the calculate the earth professes due to surch	wall. ressure due to surcharge by large. I Q is FALSE ad Q is TRUE
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41.		en poured into a 2 litre capacity cylinder which is aces 188 cm ³ of water. The density of water is and is:
	(1) 2.66	(2) 2.52
	(3) 2.72	(4) 2.55
42.	A soil sample having a void ratio of 2.60, is a state of:	f 1.3, water content of 50 % and a specific gravity of
	(1) Partial saturation	(2) Full saturation
	(3) over saturation	(4) Under saturation
43.	Traffic density is defined as:	
	(1) The number of vehicles per uni	t length
	(2) The number of vehicles moving	g in a specific direction per lane per day
	(3) The number of vehicles passing	g a given point in one hour
	(4) The number of vehicles moving	g in a specific direction per hour
44.	A dry soil has mass specific gravity the void ratio will be:	y of 1.35, if the specific gravity of solids is 2.7, then
	(1) 0.5	(2) 1.0
	(3) 1.5	(4) 2.0
45.	Effective stress on soil:	
	(1) Increases voids and decreases p	permeability
	(2) Increases both voids ratio and p	permeability
	(3) Decreases both voids ratio and	permeability
	(4) Decreases voids ratio and incre	ases permeability
46.	Coarse grained soils are best compa	cted by:
	(1) Vibratory roller	(2) Rubber tyred roller
	(3) Sheep's foot roller	(4) Drum roller
47.	When the Adiabatic Lapse Rate (A then the ELR can be called as:	LR) is more than Environment Lapse Rates (ELR),
	(1) Super adiabatic lapse rate	(2) Sub adiabatic lapse rate
	(3) Dry adiabatic lapse rate	(4) Wet adiabatic lapse rate
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P. T. O.

48.	A vehicle has a wl curved path with a r	neel base of 6.5 m. nean radius of 32 m	What is the off tra	cking while negotiating a
	(1) 0.72 m	(2) 0.9 m	(3) 0.87 m	(4) 0.66 m
49.	A sample of soil had natural moisture con	as liquid limit 45% ntent 30%. The liquid	Plastic limit 25%, dity index of soil is:	shrinkage limit 17% and
	(1) 15/20	(2) 13/20	(3) 8/20	(4) 5/20
50.	The phenomenon was:	hen soil loses its she	ear strength due to o	scillatory motion is known
	(1) Consolidation	(2) Shear failure	(3) Liquefaction	(4) Sloughing
51.	The water content of	of a soil remains unch	nanged during the en	tire test in:
	(1) Drained Test		(2) Consolidated d	rained test
	(3) Unconsolidated	drained test	(4) None of these	
52.	Bacteria which use	carbon dioxide as a	source of carbon are	known as:
	(1) Autotropic	(2) Heterotrophic	(3) Aerobic	(4) Anaerobic
53.	Length to diameter	ratio for cylindrical	specimen of soil for t	riaxial shear test is:
	(1) 1.0	(2) 1.5	(3) 2.0	(4) 2.5
54		-41i-a-i-lala	mor limit of chlori	de content is:
54.	In case of potable v (1) 250 PPM	(2) 300 PPM	(3) 350 PPM	(4) 100 PPM
55.	The transverse slow known as:	pe provided to the	road surface for dra	inage of the rain water is
	(1) Camber	(2) Gradient	(3) Super elevation	n (4) Curve
56.	The process of obta	ining increased dens	sity of soil in a fill by	reduction of its pore space
	by the expulsion of			
	(1) Soil exploration	n	(2) Soil stabilization	
	(3) Soil compactio	n	(4) Consolidation	
57.	The shrinkage inde	x is equal to:		
	(1) liquid limit + p		(2) plastic limit –	
	(3) liquid limit – s		(4) shrinkage limit	t – liquid limit

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58.	When was the wat	er (Prevention and P	ollution) Act enact	ted by the Indian Parliament:			
	(1) 1970	(2) 1974	(3) 1980	(4) 1985			
59.	Which of the follo	wing soil possesses a	zero plasticity inde	x ?			
	(1) Clay	(2) Clayey silt	(3) Sand	(4) Silty			
60.	The strength of a s	oil is usually identifi	ed by:				
	(1) Direct tensile!	stress	(2) Direct comp	pressive stress			
	(3) Ultimate shear	stress	(4) Effective str	ress			
61.	For a flow to be in	rotational, the vortici	ty is:				
	(1) zero	(2) one	(3) two	(4) four			
62.	Ball pen works on	the principle of:					
	(1) Viscosity		(2) Surface tension				
	(3) Gravitational f	orce	(4) Boyle's Law	Y			
63.		ontains an oil which (2) 6 kN/m ³		e specific weight of the oil is: (4) 10 kN/m ³			
64.	The unit of kinema	atic viscosity in S. I.	units is :				
	(1) N-m/s	(2) N-s/m ²	(3) m ² /sec	(4) N-m			
65.	The dimension of	dynamic viscosity:					
	(1) ML ⁰ T ⁻¹	(2) $ML^{-1}T^{-2}$	(3) $ML^{-2}T^{-2}$	(4) $ML^{-1}T^{-2}$			
66.		peed are 40 kmph ar		e/km. If the time mean speed ectively, the average headway			
	(1) 8.33×10^{-3}	(2) 6.25×10^{-4}	(3) 2.25	(4) 3.00			
67.	The bio-chemical t	reatment of sewage	effluent is a proces	ss of:			
	(1) Oxidation	(2) Deoxidation	(3) Self purifica	ation (4) Sedimentation			
68.	The global warmin	g is mainly caused b	y :				
	(1) NO _X	(2) SO _X	(3) CO ₂	$(4) O_2$			

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69.	What is the accepta	able limit for pH of	drinking water 2	
	(1) 7.5 - 9.5	(2) 9.5 – 10.5	734 F F	(4) 6.5 - 8.5
70.	The maximum effi	ciency of transmissi	on through a pipe is:	
	(1) 50	(2) 56.7	(3) 66.67 %	(4) 76.66 %
-	A			
71.	A rectangular chai	anel section will be i	most efficient when:	
	(1) Hydraulic radi	ius is equal to half th	ne depth of flow	
		ius is aqual to the de		
		is equal to the botto		
	(4) Deput of How	is equal to half the l	hydraulic radius	
72.	In a submerged o	rifice, the effective	head is 2 m. If $C_v =$	1, the velocity through the
	orifice is:			
	(1) 1.414 m/s	(2) 4.43 m/s	(3) 4.905 m/s	(4) 6.26 m/s
73.	The loss of energy	y at the exit from a p	ine is given as:	
		(2) $h_E = V^2/3g$		(4) $h_E = 2V^2/g$
74.			oss-section area 19.62	5 m ² and perimeter 15.7 m.
	The hydraulic me		(2) 6	(1) 7
	(1) 4 m	(2) 5 m	(3) 6 m	(4) 7 m
75.	The precipitation	is measured in terms	s of:	
	(1) Intensity of p		(2) Depth of water	
	(3) Quantity of w	vater	(4) Volume of wa	iter
			- TI of rainwater is:	
16.		idered acid rain if th	e pH of rainwater is: (2) less than 5.6	
	(1) less than 7.0		(4) less than 3.0	
	(3) less than 4.5		(4) ICSS CITALITY	
77.	Which of the foll	owing is not a comn	non use of unit hydrog	raphs?
	(1) Extending flo	od flow records bas	ed on rainfall	
		sting and warning sy		

(3) Estimation of time of concentration

(4) Design of hydraulic structures

78.	The rainfall of five successive days were and 20 mm respectively. If the storm estimated as 50 mm/day, the total surface	loss rate	e for the	m, 80 mm.	area is	0 mm earlier
		(3) 90 m		(4) 140 1	nm	
79.	Which hydrological method is commonl watersheds?	y used for	estimatin	g flood pe	aks in ung	auged
	(1) Rational Method	(2) SCS	Curve Nu	mber Meth	od	
	(3) HEC-RAS Modeling	(4) Unit	Hydrograp	ph Method		
80.	The length of the side of warning sign bo	ards of ro	ads is:			
	(1) 30 cm	(2) 45 cm	n			
	(3) 60 cm	(4) 75 cm	n			
81.	Which of the following are known as the	formation	constants	s of an aqu	ifer?	
	(1) Storativity and permeability	(2) Perm	eability ar	nd specific	storage	
	(3) Specific storage and transmissibility	(4) Trans	smissibilit	y and stora	tivity	
82.	Hydrology deals with: (1) process of depletion of water resource (2) process of natural science of water (3) process of various water phases (4) all of the above	es of land				
83.	Which of the following is a primary air p	ollutant?				
	(1) Sulphur dioxide	(2) Nitro	gen dioxi	de		
	(3) Carbon monoxide	(4) Carb	on dioxid	2		
84.	The hydrograph of short duration can be by:	converte	d into hyd	lrograph o	f longer d	uration
	(1) unit hydrograph	(2) synth	netic unit l	aydrograph	1	
	(3) s-curve method	(4) flood	lrouting			
85.	Wet mix macadam is used for construction	on of:				
	(1) sub grade	(2) sub b	pase/base			
	(3) wearing course	(4) beari	ng course			

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	An aquiclude is: (1) A non-artesian aquifer (2) An artesian aquifer (3) A solid impermeable layer underlying or overlying an aquifer (4) A large underground water body
87.	The longitudinal joints are provided when the width of road is more than: (1) 3 m (2) 4 m (3) 5.5 m (4) 6.75 m
88.	If the specific capacity of a well is 1.166 litres/sec, then the discharge from this well under a depression head of 3 m head will be: (1) 1.66 litre/s (2) 3.5 litre/sec (3) 10.5 litre/sec (4) None of the above
89.	
90.	The yield of a well can be obtained by: (1) a pumping test (2) recuperating test (3) a chemical test (4) either (1) or (2)
91.	A sewer which receives sewage from the collection system and conducts it to a point of final disposal is called a: (1) Common sewer (2) Trunk sewer (3) Branch sewer (4) Outfall sewer
92.	The optimum depth of kor watering for wheat in the plains of North India is: (1) 13.5 cm (2) 16.5 cm (3) 19 cm (4) 21 cm
93.	The internal diameter of the sewer should not be less than: (1) 15 cm (2) 25 cm (3) 50 cm (4) 75 cm
94.	The channel used to bypass the excess water entering a canal is called: (1) Canal escape (3) Canal module (4) None of these

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95.	Which of the following does not include in the phases of fighway planning (1) Financing						
	(2) Showing the phasing of a plan in the five-year plan						
	(3) Assessment of road length requirem						
	(4) Preparation of master plan						
96.	Which of the following is the other name	e of	perennial irrigation system?				
	(1) Flood Irrigation	(2)	Controlled Irrigation				
	(3) Direct Irrigation	(4)	Storage Irrigation .				
97.	Which of the following type of Irrigation	n sys	tem is practised on small scale in India?				
	(1) Lift Irrigation	(2)	Flood Irrigation				
	(3) Natural Sub-irrigation	(4)	Artificial Sub-irrigation				
98.	Lining of Irrigation channels:						
	(1) May stop leakage water	(2)	Creates water logging in near-by areas				
	(3) Both (1) and (2)	(4)	None of the above				
99.	The main cause of silting in channel is:						
	(1) non-regime section	(2)	inadequate slope				
	(3) defective head regulator	(4)	all of the above				
00.	The amount of oxygen consumed by se dichromate is termed as:	ewag	e from an oxidising agent like potassium				
	(1) Bio-chemical Oxygen Demand (B.O	D.)					
	(2) Chemical Oxygen Demand (C.O.D.)						
	(3) Relative stability						
	(4) None of the above						

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Ph.D-EE-December, 2024 Civil Engineering

SET-Y

1.0002

		Sr. No
Time: 11/4 Hours Roll No. (in figures) Name Father's Name Date of Examination	Max. Marks : 100 (in words) Date of Birth Mother's Name	Total Questions : 100
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	A rectangular channel section will be most efficient when: (1) Hydraulic radius is equal to half the depth of flow (2) Hydraulic radius is aqual to the depth of flow (3) Depth of flow is equal to the bottom width (4) Depth of flow is equal to half the hydraulic radius						
2.	In a submerged o orifice is:	rifice, the effective	head is 2 m. If C _v =	= 1, the velocity through the			
	(1) 1.414 m/s	(2) 4.43 m/s	(3) 4.905 m/s	(4) 6.26 m/s			
3.	The loss of energy $(1) h_E = V^2/g$	at the exit from a p	ipe is given as:	07.721			
	(r) rE - 118	(2) $h_E = V^2/3g$	(3) $h_E = V^2/2g$	(4) $h_E = 2V^2/g$			
4.	The water is flow The hydraulic me	ing in a pipe of croan diameter is:	ss-section area 19.62	25 m ² and perimeter 15.7 m.			
	(1) 4 m	(2) 5 m	(3) 6 m	(4) 7 m			
5.	The precipitation (1) Intensity of p (3) Quantity of v		s of : (2) Depth of wat (4) Volume of w				
6.	A rainfall is cons	idered acid rain if th	e pH of rainwater is:				
	(1) less than 7.0		(2) less than 5.6				
	(3) less than 4.5		(4) less than 3.0				
7.	Which of the foll	owing is not a comm	non use of unit hydro	graphs ?			
	(1) Extending flo	ood flow records bas	ed on rainfall				
	(2) Flood foreca	sting and warning sy	stems				
	(3) Estimation o	f time of concentrati	on				
	(4) Design of hy	draulic structures					
8.	and 20 mm res	nectively. If the st	vere measured as 100 orm loss rate for the face run off will be: (3) 90 mm	mm, 80 mm, 60 mm, 40 mm ne catchment area is earlier (4) 140 mm			

(1) 50 mm

(2) 60 mm

2				1 for estim	ating flood peaks:	
9.	Which hydrologi	cal method is commo				ungau
	watersheds?	L-4	(2) SCS Curve Number Method			
	(1) Rational Met (3) HEC-RAS M	odeling	(4) U	Init Hydro	graph Method	
		side of warning sign l	boards o	f roads is		
10.		Side or	(2) 4.	5 cm		
	(1) 30 cm (3) 60 cm		(4) 7.	5 cm		
44	The water content	of a soil remains unc	hanged	during the	entire test in:	
11.	(1) Drained Test		(2) C	onsolidate	d drained test	
	(3) Unconsolidate		(4) N	one of the	se	
				See .		
12.		e carbon dioxide as a				
	(1) Autotropic	(2) Heterotrophic	(3) A	erobic	(4) Anaerobic	
13.	Length to diameter ratio for cylindrical specimen of soil for triaxial shear test is:					
	(1) 1.0	(2) 1.5	(3) 2.		(4) 2.5	
14.	In case of potable	water the permissible	upper li	mit of chlo	oride content is:	
	(1) 250 PPM	(2) 300 PPM	(3) 35	0 PPM	(4) 100 PPM	
15.	The transverse slo known as:	ope provided to the	road sur	face for d	lrainage of the rain	water
	(1) Camber	(2) Gradient	(3) Su	per elevati	ion (4) Curve	
16.	The process of obt	aining increased dens	ity of so	il in a fill l	by reduction of its por	e spac
		f air, is known as:				
	(1) Soil exploration		(2) So	il stabiliza	tion	
	(3) Soil compaction	on	(4) Co	nsolidation	n	
	The shrinkage inde					
	(1) liquid limit + p		(2) pla	stic limit -	- liquid limit	
	(3) liquid limit - s	hrinkage limit			it — liquid limit	
18.	When was the wate	er (Prevention and Pol	Innet a		Da-liet	ment:
		(2) 1974	(3) 100	20	d by the Indian Parna (4) 1985	
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		PP. MILL	1)/(B)			

P. T. O.

19.	Which of the following soil possesses zero plasticity index?				
				Sand	(4) Silty
20.	The strength of a soil is us	ually identified	by:		
	(1) Direct tensile stress			Direct compress	ive stress
	(3) Ultimate shear stress		(4)	Effective stress	
21.	The traffic starts dischar turning green. The constaposition is referred to as:	ant headway co	-		
	(1) intersection headway			saturation heady	
	(3) effective headway		(4)	discharge headw	ay
22.	The average density of ear	th may be taker	1 as		
	(1) 5.51 g/cc		(2)	5.51 kg/cc	
	(3) 3.9 g/cc		(4)	3.9 kg/cc	
23.	Soil deposit formed due to (1) aeolian deposit (3) alluvial deposit		(2)	vind is termed as lacustrine deposi estuarine deposi	it
24.	Water losses in water supp	olv is assumed a	is:		
	(1) 5% (2) 7			10%	(4) 15%
25.					
	(1) 0.0045 mm (2) 0	.045 mm	(3)	0.45 mm	(4) 0.154 mm
26	A body floating in a liquid	l is in a stable st	tate	of equilibrium if	its:
	(1) Metacentre lies above				
	(2) Metacentre lies below	its centre of gr	avity	y	
	(3) Metacentre coincides	with its centre	of gr	avity	
	(4) Centre of gravity is be	elow its centre o	of bu	oyancy	
27.	 (1) Straight (2) Parabolic (3) Straight at edges and 	parabolic in mic	ddle		
	(4) Parabolic at edges and				
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	Assumptions made in the Terzaghi's consolidation theory is: (1) Soil is saturated (2) Compression is one dimensional (3) The coefficient of permeability is constant (4) All of the above
29.	Which one of the following products is <i>not</i> obtained in anaerobic decomposition glucose? (1) CO ₂ (2) CH ₄ (3) HS ₂ (4) H ₂ O
30.	Consider the statements P and Q related to the analysis/design of retaining walls. P: When a rough retaining wall moves toward the backfill, the wall frict force/resistance mobilizes in upward direction along the wall. Q: Most of the earth pressure theories calculate the earth pressure due to surcharge neglecting the actual distribution of stresses due to surcharge.
	Which one of the following options is correct? (1) Both P and Q are TRUE (2) P is TRUE and Q is FALSE (3) Both P and Q are FALSE (4) P is FALSE and Q is TRUE
31.	Creep of concrete under compression is defined as the
32	A jet of water having a velocity of 20 m/s strikes a series of plates fixed radially on wheel revolving in the same direction as the jet at 15 m/s. What is the percentage efficiency of the plates? (round off to one decimal place) (1) 37.5 (2) 66.7 (3) 50.0 (4) 88.9
3;	3. The shape of the most commonly deigned highway vertical curve is: (1) Spiral (2) Parabolic (3) Circular (same radius) (4) Circular (different radius)

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	made to one litre. The atomic weights of H and CI are 1 and 35.5, respectively Neglecting the dissociation of water, the pH of the solution, is:				
	(1) 2.50	(2) 3.50	(3) 2.01	(4) 3.01	
35.	A highway design 250 m. If the design elevation is:	ed for 80 km/h spe gn lateral friction is	ed has a horizontal assumed to develop	curve section with radius p fully, the required super	
	(1) 0.02	(2) 0.05	(3) 0.09	(4) 0.07	
36.	As per IS 456: 200	0, the pH value of w	ater for concrete mix	shall not be less than:	
	(1) 4.5	(2) 6.0	(3) 5.5	(4) 5.0	
37.	Wind blown silt ha	ving little or no strati	ification is called:		
	(1) Talus	(2) Drift	(3) Peat	(4) Loess	
38.	The ratio of lateral	strain to linear strain	is known as:		
	(1) Modulus of ela	sticity	(2) Modulus of rig	idity	
	(3) Poisson's ratio		(4) Elastic limit		
39.	A glass rod have as bulk modulus (in G		90 GPa and Poisson	's ratio of 0.2 will have its	
	(1) 50	(2) 108	(3) 270	(4) 91	
40.		ted beam of span L on under the load wil		W at the mid span, then	
	(1) WL $^3/3$ EI	(2) WL $^3/8EI$	(3) WL $^3/48EI$	(4) 5/384.WL ³ /3EI	
41.	A sewer which rece final disposal is cal		e collection system a	nd conducts it to a point of	
	(1) Common sewer	r (2) Trunk sewer	(3) Branch sewer	(4) Outfall sewer	
42.	The optimum depth	of kor watering for	wheat in the plains of	f North India is:	
	(1) 13.5 cm	(2) 16.5 cm	(3) 19 cm	(4) 21 cm	
43.	The internal diamet (1) 15 cm	er of the sewer should (2) 25 cm	ld not be less than: (3) 50 cm	(4) 75 cm	
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	The channel used	to bypass the exc	ess water entering a t	anal is called:
	(1) Canal escape		(2) Canal regu	
	(3) Canal module		(4) None of th	CSC
45.	Which of the follo	owing does not in	clude in the phases of	highway planning?
	(1) Financing			
	(2) Showing the j	phasing of a plan	in the five-year plan	
	(3) Assessment o			
	(4) Preparation of	f master plan		
46.	Which of the follo	owing is the other	name of perennial in	rigation system?
	(1) Flood Irrigati		(2) Controlled	
	(3) Direct Irrigati	on	(4) Storage In	rigation
47.	Which of the follo	owing type of Irri	gation system is pract	tised on small scale in India?
	(1) Lift Irrigation		(2) Flood Irrig	
	(3) Natural Sub-i		(4) Artificial S	Sub-irrigation
48.	Lining of Irrigation	on channels:		
	(I) May stop leal	kage water	(2) Creates wa	ater logging in near-by areas
	(3) Both (1) and	(2)	(4) None of th	ie above
49.	The main cause o	f silting in channe	el is:	
	(1) non-regime s	ection	(2) inadequate	e slope
	(3) desective hea	d regulator	(4) all of the a	above
50.	The amount of o dichromate is terr		by sewage from an	oxidising agent like potassiun
	(1) Bio-chemical	Oxygen Demand	(B.O.D.)	
	(2) Chemical Ox	ygen Demand (C.	O.D.)	
	(3) Relative stabi	lity		
	(4) None of the a	bove		
51.	For a flow to be in	rotational, the vo	rticity is:	
	(1) zero	(2) one	(3) two	(4) four
	(1) zero	(2) one	(3) two	(4) four

52.	Ball pen works on to (1) Viscosity (3) Gravitational for		(2) Surface tension(4) Boyle's Law	
53.	A vessel of 4 m ³ co (1) 4.5 kN/m ³	ntains an oil which v (2) 6 kN/m ³	veighs 30 kN. The sp (3) 7.5 kN/m ³	ecific weight of the oil is: (4) 10 kN/m ³
54.	The unit of kinema (1) N-m/s	tic viscosity in S. I. v (2) N-s/m ²	mits is: (3) m²/sec	(4) N-m
55.	The dimension of one (1) ML ⁰ T ⁻¹	dynamic viscosity: (2) ML ⁻¹ T ⁻²	(3) $ML^{-2}T^{-2}$	(4) $ML^{-1}T^{-2}$
56.	and space mean space (in sec) between the	beed are 40 kmph are vehicle is:		m. If the time mean speed vely, the average headway
	$(1) 8.33 \times 10^{-3}$	$(2) 6.25 \times 10^{-4}$	(3) 2.25	(4) 3.00
57.	The bio-chemical to (1) Oxidation	treatment of sewage (2) Deoxidation		f: n(4) Sedimentation
58		ig is mainly caused b	v:	
•••	(1) NO _X	(2) SO _X	(3) CO ₂	$(4) O_2$
59.	What is the accept (1) 7.5 - 9.5	able limit for pH of (2) 9.5 – 10.5	drinking water? (3) 5.5 – 7.5	(4) 6.5 – 8.5
60	The morimum off	iciency of transmissi	on through a pipe is:	
	(1) 50	(2) 56.7	(3) 66.67 %	(4) 76.66 %
61.	Which of the follo	wing are known as the	he formation constant	s of an aquifer?
	(1) Storativity and			
		and specific storage		
		ge and transmissibili	Ly	
	(4) Transmissibili	ity and storativity		

62.	Hydrology deals with:					
	(1) process of depletion of water resources of land					
	(2) process of natural science of water					
	(3) process of various water phases					
	(4) all of the above					
63.	Which of the following is a primary air pol	lutant ?				
	(1) Sulphur dioxide (2	2) Nitrogen dioxide				
	(3) Carbon monoxide (4	4) Carbon dioxide				
64.	The hydrograph of short duration can be of by:	onverted into hydro	ograph of longer duration			
	(1) unit hydrograph (2	2) synthetic unit hy	drograph			
	(3) s-curve method (4	flood routing				
65	With mir mand for construction	of.				
65.		2) sub base/base				
		t) bearing course				
	(5) Wearing course (5)	r) bearing course				
66.	An aquiclude is:					
	(1) A non-artesian aquifer					
	(2) An artesian aquifer					
	(3) A solid impermeable layer underlying	or overlying an aqu	ifer			
	(4) A large underground water body					
67.	The longitudinal joints are provided when	he width of road is	more than ·			
			(4) 6.75 m			
68.	If the specific capacity of a well is 1.166 under a depression head of 3 m head will b		discharge from this well			
	(1) 1.66 litre/s (2) 3.5 litre/sec (3)	3) 10.5 litre/sec	(4) None of the above			
69.	Which of the following external changes ca (1) Increase in sunlight	use the rate of tran	spiration to decrease?			
	(2) Increase in temperature					
	(3) Increase of carbon dioxide concentration	n				
	(4) Increase of available soil water					
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70.	The yield of a well can be obtained by:					
	(1) a pumping test	(2) recuperating test				
	(3) a chemical test	(4) either (1) or (2)				
71.	A sample of 500 g dry sand, when popartially filled with water, displaces 1g/cm ³ . The specific gravity of the sand i	ured into a 2 litre capacity cylinder which is 188 cm ³ of water. The density of water is s:				
	(1) 2.66	(2) 2.52				
	(3) 2.72	(4) 2.55				
-	A soil sample having a void ratio of 1.3, 2.60, is a state of:	water content of 50 % and a specific gravity of				
	(1) Partial saturation	(2) Full saturation				
	(3) over saturation	(4) Under saturation				
73.	Traffic density is defined as:					
	(1) The number of vehicles per unit length					
	(2) The number of vehicles moving in a					
	(3) The number of vehicles passing a gi					
	(4) The number of vehicles moving in a	specific direction per hour				
74.	A dry soil has mass specific gravity of the void ratio will be:	1.35, if the specific gravity of solids is 2.7, then				
	(1) 0.5	(2) 1.0				
	(3) 1.5	(4) 2.0				
75.	Effective stress on soil:					
	(1) Increases voids and decreases perm	eability				
	(2) Increases both voids ratio and permeability					
	(3) Decreases both voids ratio and permeability					
	(4) Decreases voids ratio and increases	permeability				
76.	Coarse grained soils are best compacted	by:				
	(1) Vibratory roller	(2) Rubber tyred roller				
	(3) Sheep's foot roller	(4) Drum roller				
	, January Brook Fortier					
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77.	When the Adiabatic Lapse Rate (ALR) is more than Environment Lapse Rates (ELR), then the ELR can be called as:				
	(1) Super adiabatic	lapse rate	(2) Sub adiabatic l	lapse rate	
	(3) Dry adiabatic la	apse rate	(4) Wet adiabatic	lapse rate	
78.	A vehicle has a w curved path with a			acking while negotiating a	
	(1) 0.72 m	(2) 0.9 m	(3) 0.87 m	(4) 0.66 m	
79.			6, Plastic limit 25%, idity index of soil is:	shrinkage limit 17% and	
	(1) 15/20	(2) 13/20	(3) 8/20	(4) 5/20	
80.	The phenomenon was:	when soil loses its sh	ear strength due to o	scillatory motion is known	
	(1) Consolidation	(2) Shear failure	(3) Liquefaction	(4) Sloughing	
81.	The minimum pitch	of the rivet shall no	t be less than:		
	(1) d	(2) 1.5d	(3) 2.0d	(4) 2.5d	
82.	The structural design design loads is:	gn method that does	not take into accour	nt the safety factors on the	
	(1) working stress	method	(2) load factor met	hod	
	(3) ultimate load m		(4) limit state meth	od	
83.	The type of bond headers is called:	in a brick masonar	y containing alternat	te course of stretcher and	
	(1) Flemish bond	(2) English bond	(3) Stretched bond	(4) Header bond	
84.	During the process content in cement cl			Dicalcium Silicate 2 (CS)	
	(1) increases		(2) initially decrease	ses and then increases	
	(3) does not change		(4) decreases		
85.	PERT technique of	network analysis is r	nainly useful for:		
	(1) Small projects		(2) Large and com	plex projects	
	(3) Research and de	evelopment project	(4) Deterministic a		
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			1.1
90-	Critical Path Method (CPM) network is: (1) Activity oriented (3) Both activity as well as event oriented (2) Event oriented 4) None of these	
	A	(2) Event (4) None of the above	
		water structure is : (2) continuous footing (4) stepped foundation	
89.	Which of the following represents hardest (1) 30/40 (2) 60/70	grade of bitumen? (3) 80/100 (4) 100/120	
91.	The degree of static indeterminacy of a ri (1) m + r - 2j (2) m + r - 3j Which of the following are indeterminate (1) 3-hinged arch (3) Redundant frame The stress carried by the King-Post of a Redundant frame	(3) $f_{cr} = 0.75 f_{ck}$ (4) $f_{cr} = 0.7/f_{ck}$ gid-jointed space frame is: (3) $3m + r - 3j$ (4) $6m + r - 6j$ structures? (2) Continuous Beam (4) Both (2) and (3)	gth
	(3) Tensile and Bending Match the following: List I P. Slope deflection method Q. Moment distribution method R. Method of three moments S. Castigliano's second theorem (1) P-I, Q-II, R-I, S-II	(4) Compressive and Bending List II I. Force Method II. Displacement Method (2) P-I, Q-I, R-II, S-II (4) P-II, Q-I, R-II, S-I	
Ph.	(3) P-II, Q-II, R-I, S-I D. EE-December, 2024/(Civil Engg.)(SET		T. O.

95.	For the adminis	stration of road trans	port, a Motor Vehicle	Act was enacted in:	
	(1) 1927	(2) 1934	(3) 1939	(4) 1947	
96.	The Muller-Br	eslau principle is the	straight application of		
	(1) Kani's theo	orem	(2) Maxwell red	ciprocal theorem	
	(3) Moment ar	rea method	(4) Unit load m	ethod	
97.	In conjugate be	eam, the loading is ec	qual to :		
	(1) Shear force diagram of actual beam				
	(2) Bending moment diagram of actual beam				
	(3) Loading of actual beam				
	(4) M/EI diagr	ram of actual beam			
98.	The horizontal as:	component of a read	ction at both lower en	d of a 3-hinged arch is kr	OV
	(1) Thrust	(2) Pull	(3) Bending	(4) Shear	
99.	The resultant of	f two perpendicular i	forces each equal to P/	2 will be equal to:	
	(1) P/\square	(2) √2	(3) 2P	$(4) \sqrt{2P}$	
100.				izontal surface on applic en block and surface is:	atio
	(1) 0.10	(2) 0.20	(3) 0.25	(4) 0.50	

Sugar, 202 Un. Yes.

Total No. of Printed Pages: 13

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Time: 11/4 Hours

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SET-Y

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	Sr. No
Max. Marks : 100	Total Questions: 100
(in words)	
Date of Birth	
Mother's Name	

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Father's Name _____ Mother's Name ____

- 2. The candidates must return the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
- 5. The candidate must not do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers must not be ticked in the question booklet.
- 6. There shall be negative marking. A deduction of 0.25 marks shall be there for each wrong answer. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

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1.	A sample of 500 g dry sand, when partially filled with water, displaces 1g/cm ³ . The specific gravity of the sand	poured into a 2 litre capacity cylinder which in 188 cm ³ of water. The density of water is lis:
	(1) 2.66	(2) 2.52
	(3) 2.72	(4) 2.55
2.	A soil sample having a void ratio of 1.3 2.60, is a state of:	3, water content of 50 % and a specific gravity of
	(1) Partial saturation	(2) Full saturation
	(3) over saturation	(4) Under saturation
3.	Traffic density is defined as:	
	(1) The number of vehicles per unit lea	ngth
	(2) The number of vehicles moving in	
	(3) The number of vehicles passing a g	given point in one hour
	(4) The number of vehicles moving in	
4.	A dry soil has mass specific gravity of the void ratio will be:	1.35, if the specific gravity of solids is 2.7, then
	(1) 0.5	(2) 1.0
	(3) 1.5	(4) 2.0
5.	Effective stress on soil:	
	(1) Increases voids and decreases perm	neability
	(2) Increases both voids ratio and perm	neability
	(3) Decreases both voids ratio and peri	neability
	(4) Decreases voids ratio and increases	s permeability
6.	Coarse grained soils are best compacted	d by:
	(1) Vibratory roller	(2) Rubber tyred roller
	(3) Sheep's foot roller	(4) Drum roller
7.	When the Adiabatic Lapse Rate (ALR) then the ELR can be called as:	is more than Environment Lapse Rates (ELR),
	(1) Super adiabatic lapse rate	(2) Sub adiabatic lapse rate
	(3) Dry adiabatic lapse rate	(4) Wet adiabatic lapse rate

8	 A vehicle has a way curved path with a 	wheel base of 6.5 m mean radius of 32 m	n. What is the off tra	acking while negotiating a
	(1) 0.72 III	(2) 0.9 m	(3) 0.87 m	(4) 0.66
9.	A sample of soil length natural moisture co (1) 15/20	nas liquid limit 459 ntent 30%. The liqu (2) 13/20	%, Plastic limit 25%, idity index of soil is: (3) 8/20	shrinkage limit 17% and
10.	The phenomenon was: (1) Consolidation	when soil loses its sh		(4) 5/20 scillatory motion is known
11,		(2) Shear failure	(3) Liquefaction	(4) Sloughing
•	The minimum pitch (1) d	of the rivet shall no (2) 1.5d	(3) 201	(4) 2.5d
12.	design loads is:	gn method that does	not take into account	the safety factors on the
	(1) working stress (3) ultimate load m	method	(2) load factor metho(4) limit state metho	od
13.	The type of bond headers is called:	in a brick masonar	y containing alternate	course of stretcher and
	(1) Fiellish bond	(2) English bond	(3) Stretched bond	(4) 77
14.	During the process of content in cement cl (1) increases	of hydration -s		Dicalcium Silicate 2 (CS)
	(3) does not change		(2) initially decreases(4) decreases	s and then increases
	PERT technique of n (1) Small projects		nainly useful for:	
	(3) Research and dev		(2) Large and complé(4) Deterministic acti	ex projects
(Critical Path Method (1) Activity oriented (3) Both activity as w (E-December 2024)	(CPM) network is:	(2) Event oriented	
rn. D. E	E-December, 2024/	(Civil Engg.)(SET-	Y)/(C)	

(2) P-I, Q-I, R-II, S-II

(4) P-II, O-I, R-II, S-I

(1) P-I, Q-II, R-I, S-II

(3) P-II, Q-II, R-I, S-I

C

	25 For the admir		Motor Vehicle	Act was enacted:	C
	(1) 1927		nsport, a Motor Vehicle (3) 1939	(4) 1947	
	(1) 1927	(2) 1934	(3) 1737		
2	26. The Muller-B	reslau principle is the	e straight application of	f :	
	(1) Kani's the	orem	(2) Maxwell re-	ciprocal theorem	
	(3) Moment a	rea method	(4) Unit load m	ethod	
2					
_	- Jonjugate D	eam, the loading is e	qual to:		
*	(1) Shear forc	e diagram of actual b	beam		
	(3) Loading at	noment diagram of a	ctual beam		
	(3) Loading of				
		am of actual beam		0	
28	The horizontal as:	component of a read	ction at both lower end	d of a 3-hinged arch is kn	own
	(1) Thrust	(2) Pull	(3) Bending	(4) Shear	
29	. The resultant of	two perpendicular f	forces each equal to P/2	2 will be equal to .	
	(1) P/\2	(2) √2	(3) 2P	$(4) \sqrt{2P}$	
30.	A block of weig	tht 20 kN just begin	s to move along a hor	izontal surface on applica	
		tal force. The coeffic	cient of friction between	izontal surface on application is :	ation
	(1) 0.10	(2) 0.20	(3) 0.25	(4) 0.50	
31.	A sewer which refinal disposal is a	eceives sewage fron	n the collection systen	n and conducts it to a poi	nt of
	(1) Common sev	ver	(2) Trunk sewer		
	(3) Branch sewe	r	(4) Outfall sewer		
32.	The optimum der	oth of kor watering (
	(1) 13.5 cm	(2) 16.5 cm	for wheat in the plains	of North India is:	
		· •	(3) 19 cm	(4) 21 am	
33.	The internal diam	eter of the sewer sh	ould not be less than		
	(1) 15 cm	(2) 25 cm	(3) 50 cm		
				(4) 75 cm	
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		38-7(01	-1)/(C)		

	The channel used to bypass the excess w	ater	entering a canal is called:
34.		(2)	Canal regulator
	(1) Canal escape	(4)	None of these
	(3) Canal module		
35.	Which of the following does not include	in th	ne phases of highway planning?
JJ.	(1) Financing		
•	(2) Showing the phasing of a plan in the	five	e-year plan
	(3) Assessment of road length requirem	ent	
	(4) Preparation of master plan		
		c	ial imigation system?
36.	Which of the following is the other name	e of j	perennial irrigation system:
	(1) Flood Irrigation	(2)	Controlled Hilgation
	(3) Direct Irrigation	(4)	Storage Irrigation
	Trication	n cvs	tem is practised on small scale in India?
37.		(2)	Flood Irrigation
	(1) Lift Irrigation	3 2	Artificial Sub-irrigation
	(3) Natural Sub-irrigation	(1)	
38.	Lining of Irrigation channels:		
00.	(1) May stop leakage water	(2)	Creates water logging in near-by areas
	(3) Both (1) and (2)	(4)	None of the above
39.	The main cause of silting in channel is:		
	(1) non-regime section	. ,	inadequate slope
	(3) defective head regulator	(4)	all of the above
40	The amount of ovugen consumed by s	ewas	ge from an oxidising agent like potassium
40.	dichromate is termed as:		
	(1) Bio-chemical Oxygen Demand (B.C).D.)	
	(2) Chemical Oxygen Demand (C.O.D.		
	(3) Relative stability		
	(4) None of the above		
			,
41.	For a flow to be irrotational, the vorticit	y is :	

(3) two

(1) zero

(2) one

(4) four

	à	ı	,	۰	
١	ı	ļ		١	
ı		Г	٦		
	٦	L	J	,	

				,
	2. Ball pen works on(1) Viscosity(3) Gravitational in	force	(2) Surface tensio(4) Boyle's Law	
43	3. A vessel of 4 m^3 constant (1) 4.5 kN/ m^3	ontains an oil which (2) 6 kN/m ³	weighs 30 kN. The space (3) 7.5 kN/m ³	pecific weight of the oil is: (4) 10 kN/m ³
44	I. The unit of kinema (1) N-m/s	ntic viscosity in S. I. (2) N-s/m ²	units is: (3) m ² /sec	(4) N-m
		(2) $ML^{-1}T^{-2}$	(3) $ML^{-2}T^{-2}$	(4) $ML^{-1}T^{-2}$
46	(in sec) between the	e vehicle is:	u 50 mp., 102p101	m. If the time mean speed vely, the average headway
	$(1) 8.33 \times 10^{-3}$	$(2) \ 6.25 \times 10^{-4}$	(3) 2.25	(4) 3.00
47.	The bio-chemical tr (1) Oxidation	reatment of sewage en (2) Deoxidation	ffluent is a process of (3) Self purification	f: 1(4) Sedimentation
48.	The global warming			
	(1) NO _X	(2) SO_X	(3) CO ₂	(4) O ₂
49.	What is the acceptal	ole limit for pH of dri	inking water 2	
	(1) 7.3 – 9.5	(2) 9.5 - 10.5	(3) 5.5 – 7.5	(4) 6.5 – 8.5
50.	The maximum emc	ency of transmission	through a minus	3.0
	(1) 50		(3) 66.67 %	
51.	The traffic starts diturning green. The position is referred to			ersection with the signal fourth or fifth headway
	(1) intersection head	lwav		Tourin or fifth neadway
	(3) effective headwa	V	(2) saturation headw	/av
			(4) discharge head	-y
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		-5/(52)	1-)/(C)	

52.	. The average density	v of earth mav b	e taken as	:		
32.	(1) 5.51 g/cc	y or curur may	(2)	5.51 kg/cc		
	(3) 3.9 g/cc		(4)	3.9 kg/cc		
			201	wind is tormed s	.a .	
53.			tation by V	lacustrine depor	sit	
	(1) aeolian deposit			estuarine depos		
	(3) alluvial deposit	ţ	(4)	estuarme depos		
54.	Water losses in wat	ter supply is assi	umed as:			
	(1) 5%	(2) 7.5%		10%	(4) 15%	
			- 7 - 1' ot	randarde is :		
55.	The smallest sieve			O 45 mm	(4) 0.154 mm	
	(1) 0.0045 mm	(2) 0.045 mm	(3)	0.45 mm	(4) 0.13 1	
56.	A body floating in	a liquid is in a s	table state	of equilibrium	if its:	
J U.	(1) Metacentre lies					
	(2) Metacentre lies					
	(3) Metacentre coi					
	(4) Centre of gravi					
	(4) Centre of gravi	ty is below its c		,		
57.	What is the recomn	nended shape of	f camber:			
	(1) Straight					
	(2) Parabolic					
	(3) Straight at edge	es and parabolic	in middle	e		
	(4) Parabolic at edg	ges and straight	at middle	£		
	(9)					
58.	Assumptions made	in the Terzaghi	's consolic	dation theory is	₫.	
	(1) Soil is saturated	1				
	(2) Compression is	one dimension	al			
	(3) The coefficient	of permeability	is consta	int		
	(4) All of the above					
	81 11			of obtained in	anaerobic decompos	ition of
59.	Which one of the	following prod	ucts is no	of obtained in	anaerobic decompos	
	glucose?				(4) H ₂ O	
	(1) CO ₂	(2) CH ₄	(3)	HS_2	(1) 2-20	
						_
			(CET V)	/(C)		P. T. O.

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			analysis/de	sign of retaining walls.			
6	0. Consider the state	tements P and Q rela	ted to the analysis	sign of retaining walls. backfill, the wall friction			
	P: When a ro	ugh retaining wall	and direction along t	he wall.			
		Most of the earth pressure theories calculate the earth pressure due to surcharge be neglecting the actual distribution of stresses due to surcharge.					
	Which one of the	e following options is	s correct?				
	(1) Both P and ((2) P is TRUE a	nd Q is FALSE			
	(3) Both P and (_	(4) P is FALSE	and Q is TRUE			
61			most efficient when	:			
		dius is equal to half t					
		dius is aqual to ths de					
	5.42	v is equal to the botto					
	(4) Depth of flow	v is equal to half the	hydraulic radius				
62.	In a submerged orifice is:	orifice, the effective	head is 2 m. If C_V =	= 1, the velocity through the			
	(1) 1.414 m/s	(2) 4.43 m/s	(3) 4.905 m/s	(4) 6.26 m/s			
63.	The loss of energy	y at the exit from a p	ipe is given as:				
			(3) $h_E = V^2/2g$	(4) $h_E = 2V^2/g$			
64.	The water is flow The hydraulic mea	ing in a pipe of cros	ss-section area 19.62	25 m ² and perimeter 15.7 m.			
	(1) 4 m	(2) 5 m	(3) 6 m	(4) 7 m			
65.	The precipitation i	s measured in terms	of:				
	(1) Intensity of pro						
	(3) Quantity of wa		(2) Depth of water	i i			
			(4) Volume of wa	ater			
66.	A rainfall is consid	ered acid rain if the	pH of rainwater is:	8			
	(1) less than 7.0						
	(3) less than 4.5		(2) less than 5.6				
			(4) less than 3.0				

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	*			
67.	Which of the following is not a common	use	of unit hydrograp	ohs?
	(1) Extending flood flow records based of			
	(2) Flood forecasting and warning system			
	(3) Estimation of time of concentration			
	(4) Design of hydraulic structures			
68.	The rainfall of five successive days were and 20 mm respectively. If the storm estimated as 50 mm/day, the total surface	los e run	s rate for the of off will be:	catchinent area is car
	(1) 50 mm (2) 60 mm	(3)	90 mm	(4) 140 mm
69.	Which hydrological method is commonl watersheds?	ly us	ed for estimating	g flood peaks in ungauged
	(1) Rational Method	(2)	SCS Curve Nur	nber Method
	(3) HEC-RAS Modeling	(4)	Unit Hydrograp	h Method
	The state of the s			
70.	The length of the side of warning sign bo			
	(1) 30 cm		45 cm	
	(3) 60 cm	(4)	75 cm	
71.	Which of the following are known as the	e for	mation constants	of an aquifer?
	(1) Storativity and permeability	(2)	Permeability ar	nd specific storage
	(3) Specific storage and transmissibility	y (4)	Transmissibilit	y and storativity
	(3) Specific Storage			
72.	Hydrology deals with:			
	(1) process of depletion of water resour	rces	of land	
	(2) process of natural science of water			
	(3) process of various water phases			
	(4) all of the above			
73.	Which of the following is a primary air	poll	utant?	
	(1) Sulphur dioxide) Nitrogen dioxi	de
	• • •	(4) Carbon dioxid	e
	(3) Carbon monoxide	('	,	

10			anyerted into hy	drograph of longer do
74	by: (1) unit hydrograph (3) s-curve metho	ph	(2) synthetic unit (4) flood routing	drograph of longer duration hydrograph
75.	Wet mix macadan (1) sub grade (3) wearing cours	is used for construct	ion of: (2) sub base/base (4) bearing course	
76.	(1) A non-artesian (2) An artesian aq	uifer neable layer underlyi	ng or overlying an ac	quifer
77.	The longitudinal jo (1) 3 m	ints are provided whe	en the width of road (3) 5.5 m	is more than: (4) 6.75 m
79.	 (1) 1.66 litre/s Which of the follow (1) Increase in sunli (2) Increase in temp 	(2) 3.5 litre/sec ing external changes ight perature on dioxide concentra	(3) 10.5 litre/sec cause the rate of tra	e discharge from this well (4) None of the above nspiration to decrease?
(2	The yield of a well call of a pumping test 3) a chemical test		(2) recuperating tes(4) either (1) or (2)	
(2 (3) (4)) increase in the ma) decrease in the ma) decrease in the ma	der compression is dagnitude of strain un agnitude of stress un agnitude of strain un agnitude of strain un agnitude of stress un agnitude of stress un Civil Engg.)(SET-)	der constant strain der constant stress	••••
		88-/(SE 1 =)	()/(C)	

82.	A jet of water having wheel revolving in efficiency of the pla	the same direction	as the jet at 15 m/s	plates fixed radially on a but the percentage
	(1) 37.5	(2) 66.7	(3) 50.0	(4) 88.9
83.	The shape of the month (1) Spiral (3) Circular (same a		d highway vertical cu (2) Parabolic (4) Circular (differen	
84.	made to one litre.	The atomic weight	distilled water and the sof H and CI are pH of the solution, is	
	(1) 2.50	(2) 3.50	(3) 2.01	(4) 3.01
85.	A highway designed 250 m. If the designed elevation is:	ed for 80 km/h spec gn lateral friction is	ed has a horizontal assumed to develop	curve section with radius fully, the required super
	(1) 0.02	(2) 0.05	(3) 0.09	(4) 0.07
86.	As per IS 456 : 200	0, the pH value of wa	ater for concrete mix	shall not be less than:
	(1) 4.5	(2) 6.0	(3) 5.5	(4) 5.0
87.	Wind blown silt hav	ving little or no strati	fication is called:	
	(1) Talus	(2) Drift	(3) Peat	(4) Loess
88.	The ratio of lateral s	strain to linear strain	is known as:	
	(1) Modulus of elas		(2) Modulus of rig	idity
	(3) Poisson's ratio		(4) Elastic limit	
89.	A glass rod have ar bulk modulus (in Gl		90 GPa and Poissor	s's ratio of 0.2 will have its
	(1) 50	(2) 108	(3) 270	(4) 91
90.		ed beam of span L n under the load wil		d W at the mid span, then
	(1) $WL^3/3EI$	(2) $WL^3/8EI$	(3) $WL^3/48EI$	$(4) 5/384.WL^3/3EI$

12					rire test in:
	The water content of (1) Drained Test (3) Unconsolidated	l drained test	(4)	None of these	
	Bacteria which use (1) Autotropic	(2) Heterotrophic	(3)	7102	
93.	Length to diameter (1) 1.0	ratio for cylindrical (2) 1.5	spec	imen of soil for t	riaxial shear test is: (4) 2.5
94.	In case of potable v (1) 250 PPM	vater the permissible (2) 300 PPM	upp (3)	er limit of chloric 350 PPM	de content is : (4) 100 PPM
95.	The transverse slop	pe provided to the	road	surface for drain	inage of the rain water is
	(1) Camber	(2) Gradient	(3)	Super elevation	(4) Curve
96.	The process of obta	iining increased dens air, is known as :	ity o	f soil in a fill by	reduction of its pore space
	(1) Soil exploration(3) Soil compaction			Soil stabilization Consolidation	on
97.	Bo 111-001	_	(0)		
	(1) liquid limit + pl(3) liquid limit - sh			plastic limit – li shrinkage limit	-
98.	When was the water (1) 1970	r (Prevention and Po (2) 1974		on) Act enacted b 1980	by the Indian Parliament: (4) 1985
99.		ving soil possesses ze (2) Clayey silt		lasticity index?	(A) Silter
100.	The strength of a so (1) Direct tensile st		d by	;	(4) Silty
	(3) Ultimate shear s		(2) (4)	Direct compres Effective stress	sive stress

Total No. of Printed Pages: 13

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SET-Y

	Civil Engineering	
		10004 Sr. No.
Time: 11/4 Hours	Max. Marks : 100	Total Questions: 100
Roll No. (in figures)	(in words)	
	Date of Birth	
	Mother's Name	
Date of Examination		
(Signature of the Candidate)	_	(Signature of the Invigilator)

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- 1. All questions are compulsory.
- 2. The candidates must return the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
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- 5. The candidate *must not* do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers must not be ticked in the question booklet.
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- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

1.	Creep of concrete (1) increase in the	e under compressio	n is defined as the	••••••	¥
	(2) increase in the	le magnitude of stra	ain under constant stre	SS ·	
	(3) decrease in the	he magnitude of str	ain under constant stra	ın	
	(4) decrease in the	he magnitude of str	ess under constant str	ess ain	
_					
2.	wheel revolving	in the same direct	20 m/s strikes a serie tion as the jet at 15 to one decimal place)	s of plates fixed radiall m/s. What is the perc	y on a centage
	(1) 37.5	(2) 66.7	(3) 50.0	(4) 88.9	
3.	The shape of the	most commonly de	eigned highway vertic	al curve is ·	
	(1) Spiral		(2) Parabolic		
	(3) Circular (sar	ne radius)	(4) Circular (di	fferent radius)	
4.	An amount of 25	67 ma HCl is add	ad to distilled water s	and the total solution vo	dume is
₹.				are 1 and 35.5, respe	
			r, the pH of the soluti		
	(1) 2.50	(2) 3.50	(3) 2.01	(4) 3.01	
5.	A highway desi 250 m. If the delevation is:	gned for 80 km/h esign lateral fricti	speed has a horizo on is assumed to dev	ntal curve section wit velop fully, the requir	h radius ed super
	(1) 0.02	(2) 0.05	(3) 0.09	(4) 0.07	
_	As per IS 456 : 2	2000 the nH value	of water for concrete	mix shall not be less t	han :
6.	(1) 4.5	(2) 6.0	(3) 5.5	(4) 5.0	
			* 5.		
7.	Wind blown silt	having little or no	stratification is calle		
	(1) Talus	(2) Drift	(3) Peat	(4) Loess	
		atrain to linear	strain is known as:		
8.			(2) Modulus	of rigidity	
	(1) Modulus of		(4) Elastic lir		
	(3) Poisson's rat	10	(7) Diastic III		
			(CT) 1/10)		P. T. O.
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9	. A glass rod have a	n elastic modulus o	of 90	GPa and Poisson	's ra	tio of 0.2 will have its
	bulk modulus (in Co.) 50	GPa): (2) 108) 270		91
10.	. If a simply suppor	ted beam of span	L ca	rries a point load	W	at the mid span, then
	(1) WL ³ /3EI	on under the load with (2) WL ³ /8EI	ill be) WL ³ /48EI	(4)	5/384.WL ³ /3EI
11.	A sewer which rece final disposal is cal	eives sewage from the	he co	ollection system a	nd c	onducts it to a point of
	(1) Common sewer	r (2) Trunk sewer) Branch sewer		
12.	The optimum depth	of kor watering for	whe	at in the plains of	No	rth India is :
	(1) 13.5 cm	(2) 16.5 cm	(3)) 19 cm	(4)	21 cm
13.	The internal diamet	er of the sewer shou	ıld no	ot be less than:		
	(1) 15 cm	(2) 25 cm		50 cm	(4)	75 cm
14.	The channel used to	bypass the excess	water	r entering a canal	is ca	alled:
	(1) Canal escape	-71	(2)	Canal regulator		
	(3) Canal module			None of these		
15.	Which of the follow	mg does not includ	e in t	he phases of high	way	planning?
	(1) Financing		C			я
	(2) Showing the pha			e-year plan		
	(3) Assessment of re		nent			
	(4) Preparation of m	iaster pian				£
16.	Which of the following	ing is the other nam	e of	perennial irrigation	on s	ystem?
	(1) Flood Irrigation			Controlled Irrig		
	(3) Direct Irrigation		(4)	Storage Irrigation	on	
17.		ng type of Irrigatio				mall scale in India?
	(1) Lift Irrigation			Flood Irrigation		
	(3) Natural Sub-irrig	ation	(4)	Artificial Sub-in	riga	ition

18.	Lining of Irrigation	channels:	•			
	(1) May stop leaka	ige water	(2) Creates water	logging in near-by areas		
	(3) Both (1) and (2)	2)	(4) None of the ab	ove		
19.	The main cause of	silting in channel is	•			
	(1) non-regime sec	ction	(2) inadequate slo	pe		
	(3) defective head	regulator	(4) all of the abov	e		
20.	The amount of ox dichromate is term		sewage from an oxid	dising agent like potassium		
	(1) Bio-chemical (Oxygen Demand (B.	O.D.)			
	(2) Chemical Oxy	gen Demand (C.O.D	D .)			
	(3) Relative stability	ity				
	(4) None of the ab	ove				
21.	A rectangular chan	nel section will be r	nost efficient when:			
	(1) Hydraulic radi	us is equal to half th	e depth of flow			
	(2) Hydraulic radius is aqual to the depth of flow					
	VAL 1507	is equal to the botto				
		is equal to half the l				
22.	In a submerged or orifice is:	ifice, the effective	head is 2 m. If $C_V =$	1, the velocity through the		
	(1) 1.414 m/s	(2) 4.43 m/s	(3) 4.905 m/s	(4) 6.26 m/s		
23.	The loss of energy	at the exit from a p	ipe is given as:			
			(3) $h_E = V^2/2g$	(4) $h_E = 2V^2/g$		
24.	The water is flowing. The hydraulic mean		ss-section area 19.62	25 m ² and perimeter 15.7 m.		
	(1) 4 m	(2) 5 m	(3) 6 m	(4) 7 m		
25.	The precipitation is	s measured in terms	of:			
	(1) Intensity of pro	essure	(2) Depth of wat	er		
	(3) Quantity of wa		(4) Volume of w			
	and the second second					

2	26. A rainfall is cons	idered acid rain if the		,		
	(1) less than 7.0		(2) less than 5.6			
	(3) less than 4.5		(4) less than 3.0			
2	(2) Flood forecas	owing is not a common ood flow records based sting and warning syst time of concentration draulic structures	d on rainfall	raphs ?		
28	and 20 mm resr	The rainfall of five successive days were measured as 100 mm, 80 mm, 60 mm, 40 mm and 20 mm respectively. If the storm loss rate for the catchment area is earlier estimated as 50 mm/day, the total surface run off will be: (1) 50 mm (2) 60 mm (3) 90 mm (4) 140 mm				
29	Which I			• ,		
	Which hydrological method is common watersheds?		nly used for estimatir	ng flood peaks in ungauged		
	(1) Rational Meth	od	(2) SCS Curve Nu	mhar Matha I		
	(3) HEC-RAS Mo	odeling				
30.			(4) Unit Hydrogra	bu metuoa		
30.	The length of the side of warning sign boards of roads is:					
	(1) 30 CIII		(2) 45 cm			
	(3) 60 cm		(4) 75 cm			
31.	The water content of a soil remains unchanged during the entire test in:					
	(1) Drained Test	diloi	(2) Consolidated the control of the			
	(3) Unconsolidate	d drained test	(2) Consolidated drained test			
			(4) None of these			
32.	Bacteria which use	carbon dioxide as a s	Source of carbon are	lzn over		
	(1) Autotropic	(2) Heterotrophic	(3) Aerobic			
22	7			(4) Anaerobic		
აა.	Length to diameter	ratio for cylindrical s	specimen of soil for t	riaxial shear tast is		
	(1) 1.0	(2) 1.5	(3) 2.0	(4) 2.5		
34.	In cose of					
04.	(1) ase of potable w	vater the permissible	upper limit of chlori	de content is ·		
	(1) 250 PPM	(2) 300 PPM	(3) 350 PPM	(4) 100 PPM		
				() 100 I I IVI		
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35.	The transverse slop known as:	pe provided to the	road surface for dr	rainage of the rain water	is
	(1) Camber	(2) Gradient	(3) Super elevation	on (4) Curve	
36.	The process of obta by the expulsion of (1) Soil exploration	air, is known as:	sity of soil in a fill b	by reduction of its pore spation	ace
	(3) Soil compaction	n	(4) Consolidation	n, "	
37.	The shrinkage index (1) liquid limit + pl		(2) plastic limit	– liquid limit	
	(3) liquid limit – sl		(4) shrinkage lin		
			. ,		247
38.		32. 33. 33. 34. 34. 34. 34. 34. 34. 34. 34.		d by the Indian Parliamer (4) 1985	nt:
	(1) 1970	(2) 1974	(3) 1980	(4) 1963	
39.	Which of the follow	wing soil possesses	zero plasticity index	ζ?	
	(1) Clay	(2) Clayey silt	(3) Sand	(4) Silty	
40.	The strength of a se	oil is usually identi	fied by:		
	(1) Direct tensile s	tress	(2) Direct comp	oressive stress	
	(3) Ultimate shear	stress	(4) Effective str	ress	
41.	The traffic starts turning green. The position is referred	e constant headwa	an approach at an y considered from	intersection with the s the fourth or fifth hea	signal dway
	(1) intersection he	adway	(2) saturation h		
	(3) effective heady	way	(4) discharge h	eadway	
42.	The average densit	y of earth may be	aken as:		
	(1) 5.51 g/cc		(2) 5.51 kg/cc		
	(3) 3.9 g/cc		(4) 3.9 kg/cc		
43.	Soil deposit forme	d due to transporta	tion by wind is tern	ned as:	
	(1) aeolian deposi		(2) lacustrine		
	(3) alluvial deposi		(4) estuarine d	-	
	(b) and the sepon	and the second s	, ,	•	

44. Water losses in water supply is assumed as:

44.	150%
	(1) 5% (2) 7.5% (3) 10% (4) 13%
45.	
	(1) 0.0045 mm (2) 0.045 mm (3) 0.45 mm (4) 0.154 mm
46.	A body floating in a liquid is in a stable state of equilibrium if its:
	(1) Metacentre lies above its centre of gravity
	(2) Metacentre lies below its centre of gravity
	(3) Metacentre coincides with its centre of gravity
	(4) Centre of gravity is below its centre of buoyancy
47.	What is the recommended shape of camber:
	(1) Straight
	(2) Parabolic
	(3) Straight at edges and parabolic in middle
	(4) Parabolic at edges and straight at middle
48.	Assumptions made in the Terzaghi's consolidation theory is:
	(1) Soil is saturated
	(2) Compression is one dimensional
	(3) The coefficient of permeability is constant
	(4) All of the above
49.	Which one of the following products is not obtained in anaerobic decomposition of glucose?
	(1) CO_2 (2) CH_4 (3) HS_2 (4) H_2O
50.	Consider the statements P and Q related to the analysis/design of retaining walls.
	1. When a fought letaining wall moves toward it
	2. Wost of the earth pressure theories coloniated
	Which one of the following options is correct? (1) Both P and Q are TRUE (2) P is TRUE
	(3) Roth Pand O - EALSE
	(4) P is FALSE and O is TRITE
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51.	The minimum pitch of the rivet shall not	be less than:
	(1) d (2) 1.5d	(3) 2.0d (4) 2.5d
52.	The structural design method that does design loads is:	not take into account the safety factors on the
	(1) working stress method	(2) load factor method
	(3) ultimate load method	(4) limit state method
53.	The type of bond in a brick masonary headers is called:	y containing alternate course of stretcher and
	(1) Flemish bond (2) English bond	(3) Stretched bond (4) Header bond
54.	During the process of hydration of ceme content in cement clinker, the heat of hy	ent, due to increase in Dicalcium Silicate 2 (CS) edration:
	(1) increases	(2) initially decreases and then increases
	(3) does not change	(4) decreases
55.	PERT technique of network analysis is	mainly useful for:
	(1) Small projects	(2) Large and complex projects
	(3) Research and development project	(4) Deterministic activities
56.	Critical Path Method (CPM) network is	
	(1) Activity oriented	(2) Event oriented
	(3) Both activity as well as event oriente	d (4) None of these
57.	Slack in a PERT network refers to:	
•	(1) Activity	(2) Event
	(3) Dummy Activity	(4) None of the above
58.	The type of foundation suitable for under	er-water structure is:
	(1) cast-in-situ concrete piles	(2) continuous footing
	(3) pier foundation	(4) stepped foundation
59.	Which of the following represents harde	est grade of bitumen ?
	(1) 30/40 (2) 60/70	(3) 80/100 (4) 100/120
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60	0. The relation between modulus of rupture (f_{cr}) and characteristic compressive strength (f_{ck}) is
	(1) $f_{cr} = 0.7 f_{ck}$ (2) $f_{cr} = 0.7 \sqrt{f_{ck}}$ (3) $f_{cr} = 0.75 f_{ck}$ (4) $f_{cr} = 0.7/f_{ck}$
61	1. A sample of 500 g dry sand, when poured into a 2 litre capacity cylinder which is partially filled with water, displaces 188 cm ³ of water. The density of water is 1g/cm ³ . The specific gravity of the sand is:
	(1) 2.66 (2) 2.52
	(3) 2.72 (4) 2.55
62	A soil sample having a void ratio of 1.3, water content of 50 % and a specific gravity of 2.60, is a state of:
	(1) Partial saturation (2) Full saturation
	(3) over saturation (4) Under saturation
63.	• Traffic density is defined as:
	(1) The number of vehicles per unit length
	(2) The number of vehicles moving in a specific direction per lane per day
	(3) The number of vehicles passing a given point in one hour
	(4) The number of vehicles moving in a specific direction per hour
64.	A dry soil has mass specific gravity of 1.35, if the specific gravity of solids is 2.7, there the void ratio will be:
	(1) 0.5 (2) 1.0
	(3) 1.5 (4) 2.0
65.	Effective stress on soil:
	(1) Increases voids and decreases permeability
	(2) Increases both voids ratio and permeability
	(3) Decreases both voids ratio and permeability
	(4) Decreases voids ratio and increases permeability
66.	Coarse grained soils are best compacted by:
	(1) Vibratory roller (2) Rubber tyred roller
	(3) Sheep's foot roller (4) Drum roller
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67.	When the Adiabatic then the ELR can be		is more than Environ	iment Lapse Rates (BER),
	(1) Super adiabatic		(2) Sub adiabatic la	ipse rate
	(3) Dry adiabatic la	ipse rate	(4) Wet adiabatic la	apse rate
68.	A vehicle has a wi	heel base of 6.5 m. mean radius of 32 m	What is the off tra	cking while negotiating a
	(1) 0.72 m	(2) 0.9 m	(3) 0.87 m	(4) 0.66 m
69.	A sample of soil hatural moisture con	nas liquid limit 45% ntent 30%. The liquid	o, Plastic limit 25%, dity index of soil is:	shrinkage limit 17% and
	(1) 15/20	(2) 13/20	(3) 8/20	(4) 5/20
70.	The phenomenon was:	hen soil loses its sh	ear strength due to o	scillatory motion is known
	(1) Consolidation	(2) Shear failure	(3) Liquefaction	(4) Sloughing
71.	For a flow to be irre	otational, the vorticit	y is:	
	(1) zero	(2) one	(3) two	(4) four
72.	Ball pen works on	the principle of :		
	(1) Viscosity		(2) Surface tensio	n
	(3) Gravitational fo	orce	(4) Boyle's Law	
73.		ontains an oil which on (2) 6 kN/m ³		pecific weight of the oil is: (4) 10 kN/m ³
74	The unit of kinema	tic viscosity in S. I. I	units is :	
(7.	(1) N-m/s	$(2) N-s/m^2$	(3) m ² /sec	(4) N-m
75.	The dimension of d	lynamic viscosity:	2 2	
	(1) $ML^{0}T^{-1}$	(2) $ML^{-1}T^{-2}$	(3) $ML^{-2}T^{-2}$	$(4) ML^{-1}T^{-2}$
76.	A single lane high and space mean sp (in sec) between th	peed are 40 kmph a	ensity of 40 vehicle/ nd 30 kmph, respec	Ikm. If the time mean speed tively, the average headway
		(2) 6.25×10^{-4}	(3) 2.25	(4) 3.00

77	The bio-chemical t(1) Oxidation	reatment of sewage e	effluent is a process o (3) Self purificatio	f: n(4) Sedimentation		
78.	The global warmin (1) NO _X	g is mainly caused by (2) SO _X	y: (3) CO ₂	(4) O ₂		
79.	What is the accepta (1) $7.5 - 9.5$	able limit for pH of d (2) 9.5 – 10.5	rinking water? $(3) 5.5 - 7.5$	(4) 6.5 – 8.5		
80.	The maximum efficient (1) 50	ciency of transmissio (2) 56.7	n through a pipe is: (3) 66.67 %	(4) 76.66 %		
81.	The degree of static (1) $m + r - 2j$	indeterminacy of a region (2) $m + r - 3j$	rigid-jointed space fra (3) 3m + r - 3j	ame is: $(4) 6m + r - 6j$		
82.	Which of the follow (1) 3-hinged arch (3) Redundant fram		te structures ? (2) Continuous Bea (4) Both (2) and (3)			
83.	The stress carried b (1) Tensile (3) Tensile and Ben		King-Post roof truss i (2) Compressive (4) Compressive an			
84.	Match the following	· ·				
	List I		List II			
	P. Slope deflection	n method	I. Force Method			
	Q. Moment distribu		II. Displacement M	lethod		
	R. Method of three					
	S. Castigliano's sec					
	(1) P-I, Q-II, R-I, S		(2) P-I, Q-I, R-II, S-	-II		
	(3) P-II, Q-II, R-I, S	S-I	(4) P-II, Q-I, R-II, S	S-I		
85.	For the administration	on of road transport,	a Motor Vehicle Act	Was angotad *		
	(1) 1927	(2) 1934	(3) 1939	(4) 1947		
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86.	The Muller-Breslau principle is the straight application of:						
	(1) Kani's theor	rem	(2) Maxwell recip	procal theorem			
	(3) Moment are	a method	(4) Unit load met	hod			
87.	 Shear force Bending mo Loading of 	am, the loading is equivalent diagram of actual beam actual beam actual beam	eam				
88.	The horizontal as:	component of a read	ction at both lower end	of a 3-hinged arch is	s known		
	(1) Thrust	(2) Pull	(3) Bending	(4) Shear			
89.	The resultant of (1) $P/\sqrt{2}$	f two perpendicular (2) $\sqrt{2}$	forces each equal to P/	2 will be equal to: $(4) \sqrt{2P}$			
90.			ns to move along a ho ficient of friction betwee (3) 0.25				
91.	(1) Storativity	and permeability	as the formation cons (2) Permeabili sibility (4) Transmissi	ty and specific storag	e		
92.	(2) process of	depletion of water natural science of various water phas	water				
93.	Which of the fo	ollowing is a prima	ary air pollutant?				
	(1) Sulphur di(3) Carbon mo	oxide	(2) Nitrogen(4) Carbon d				
. T	DE D	2024//Civil Enga	z)(SET-Y)/(D)		P. T. C		

94.	The hydrograph of short duration can be converted into hydrograph of longer duration by: (1) unit hydrograph (2) synthetic unit hydrograph				
	(1) unit hydrograp	h	(2) sy	nthetic unit hy	drograph
	(3) s-curve method		(4) flo	ood routing	
95.	Wet mix macadam	is used for construct	tion of :		
	(1) sub grade	is used for construct	(2) su	b base/base	
	(3) wearing course	F	(4) be	earing course	,
96.	An aquiclude is:				
	(1) A non-artesian	aguifer			
	(2) An artesian aqu				
	(3) A solid imperm	neable layer underly	ing or ov	erlying an aq	uifer
	(4) A large underg		C		
97.	The longitudinal jo	ints are provided wh	nen the v	vidth of road i	s more than:
	(1) 3 m	(2) 4 m	(3) 5.		(4) 6.75 m
98.				s/sec, then the	e discharge from this well
	under a depression (1) 1.66 litre/s			0.5 litre/sec	(4) None of the above
	(1) 1.00 nue/s	(2) 3.5 Htre/sec	(3) 1	0.5 Hue/sec	(4) None of the above
99.	Which of the follow	ving external change	es cause	the rate of tra	nspiration to decrease?
	(1) Increase in sun	light			
	(2) Increase in tem	perature			
	(3) Increase of carl	oon dioxide concent	ration		
	(4) Increase of avar	ilable soil water		ħ	
00.	The yield of a well	can be obtained by	•		
	(1) a pumping test			ecuperating te	st
	(3) a chemical test			ither (1) or (2	
			() -	(1) 0. (2	,

	Answer keys of PH.D	exam dated 05.12.202	4	
Q. NO.	A	В	С	D
1	4	1	1	1
2	4	4	2	1
3	2	3	1	2
4	3	2	2	4
5	3	2	3	2
6	2	2	1	2
7	4	3	2	4
8	1	3	4	3
9	1	2	4	1
10	3	2	2	3
11	1	3	4	4
12	1	1	1	1
13	2	3	2	1
14	4	1	4	1
15	2	1	3	1
16	2	4	1	2
17	4	3	1	4
18	3	2	3	1
19	1	3	1	4
20	3	3	2	2
21	4	2	4	1
22	1	1	4	4
23	2	1	2	3
24	4	4	3	2
25	3	2	3	2
26	1	1	2	2
27	1	3	4	3
28	3	4	1	3
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30	2	4	3	2
31	2	1	4	3
32	1	1	1	1
33	1	2	1	3
34	4	4	1	1
35	2	2	1	1
36	1	2	2	4
37	3	4	4	3
38	4	3	1	2
39	3	1	4	3
40	4	3	2	-3
41	1	4	1 2	2
42	2	1		1
43	1	1	3	1
44	2	1	3	4
45	3	1	4	2
46	1	2	4	1
47	2	4	1	3
48	4	1	3	4
49	4	4	4	3
50	2	2	3	4

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Answer keys of PH.D (CIVIL)-UIET entrance exam dated 05.12.2024					
Q. NO.	А	В	С	D	
51	3	1	2	4	
52	1	2	1	1	
53	3	3	1	2	
54	1	3	4	4	
55	1	4	2	3	
56	4	4	1	1	
57	3	1	3	1	
58	2	3	4	3	
59	3	4	3	1	
60	3	3	4	2	
61	1	4	1	1	
62	2	4	4	2	
63	3	3	3	1	
64	3	3	2	2	
65	4	2	2	3	
66	4	3	2	1	
67	1	2	3	2	
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72	4	2	4	2	
73	3	1	3	3	
74	2	2	3	3	
75	2	3	2	4	
76	2		3		
	3	2	2	4	
77				1	
78	3	4	2	3	
79	2	4	3	4	
80	2	2	4	3	
81	4	4	1	4	
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84	3	4	4	3	
85	2	3	2	3	
86	3	1	2	2	
87	2	1	4	4	
88	2	3	3	1	
89	3	1	1	1	
90	4	2	3	3	
91	4	4	3	4	
92	1	4	1	4	
93	1	2	3	3	
94	1	3	1	3	
95	1	3	1	2	
96	2	2	4	3	
97	4	4	3	2	
98	1	1	2	2	
99	4	1	3	3	
100	2	3	3	4	

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