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Que	estion Paper with Final (Revised) Answer Key for the Post of Assistant Engineer (Civil) held on 11-09-2018		
Iter Q1	mcode: AC1001 Punching of hole is permitted only in a material, whose yield strength (f _y)does not exceed and where thickness does not exceed (5600/f _y) mm.		
Α	240 MPa		
В	250 MPa		
С	280 MPa		
D	360 MPa		
Coi	rrect Ans: D		
Iter Q2	mcode: AC1002 With reference to fire resistance of steel structures, the following relationship is correct:		
A	Period of Structural Adequacy > Fire Resistance Level		
В	Period of Structural Adequacy < Fire Resistance Level		
С	Both of the above.		
D	None of the above.		
Coı	rrect Ans: A		
 Itemcode : AC1003 Q3: In fatigue loading, the maximum stress range should not exceed for shear stress. Where, f_y is the yield strength of the material. 			
A	$ f_y $		
В	1.5 f _v		
С	$f_{y}/(3)^{0.5}$		
D	1.5 f _y / (3) ^{0.5}		
Coi	rect Ans: D		
Iter Q4	 mcode : AC1004 In fatigue analysis, the values obtained from standard S-N curve are modified by a capacity reduction factor, when plates are greater than in thickness and are joined together by transverse fillet or butt welding. 		
A	25 mm		
В	20 mm		
С	15 mm		
D	10 mm		
Coı	rect Ans: A		
Ite	mcode: AC1005 Lug angles are used to		
Α	transmit load on wider area.		
В	reduce the length of the connection		
С	promote use of angles.		
D	none of the above.		
Coi	rrect Ans: B		
Iter Q6	 ncode: AC1006 The minimum edge distance and end distances from the centre of any hole to the nearest edge of a plate should not be less thanin case of hand flame cut edges. 		
Α	1.7 times the hole diameter		
В	1.5 times the hole diameter		

С	1.3 times the hole diameter
D	1.2 times the hole diameter
Cor	rect Ans: A
Iten Q7:	ncode: AC1007
Α _	4
В	5
С	6
D	7
Cor	rect Ans: A
Iten	ncode : AC1008
Q8:	
Α	5 to 10 %
В	10 to 15 %
С	15 to 20%
D	20 to 25%
Cor	rect Ans: A
	ncode: AC1009
Q9:	
Α	0 to 25 mm.
В	25 to 50 mm.
С	50 to 100 mm.
D	100 to 150 mm.
Cor	rect Ans: D
Iten	n <u>code</u> : AC1010
	9: Minimum cement content in concrete including flyash and ground granulated blast furnace slag, to be used in reinforced
	concrete under mild exposure should not be less than
Α	220 kg/m ³
В	240 kg/m ³
С	280 kg/m ³
D	300 kg/m ³
Cor	rect Ans: D
	ncode: AC1011 : A simply supported beam should be so proportioned that the clear distance between lateral restraints does not exceed
Α.	60 b.
В	250 b ² /d.
	60 b or 250 b ² /d whichever is less.
D	none of the above.
Cor	rect Ans: C
Itemcode : AC1012 Q12: For deformed bars conforming to IS: 1786, the values of bond strength should be increased by	
Α	15%
В	25%
С	45%

D 60%

Correct Ans: D

Litemcode: AC1013
Q13: Maximum distance between distribution reinforcement bars in a slab should not be more than

A five times effective depth of solid slab.

B 450 mm.

C smaller of (A) and (B).

D none of the above.

Correct Ans: C

Itemcode : AC1014

Q14: Minimum thickness of footing, when it is resting on piles

A
75 mm.

B
150 mm.

c
225 mm.

D
300 mm.

Correct Ans: D

Itemcode : AC1016Q16: At the time of failure, the maximum strain in tension reinforcement at the failure section should not be less thanA $f_y/(1.15 E_s)$ B $f_y/(1.15 E_s) + 0.002$ C $f_u/(1.15 E_s) + 0.002$ Correct Ans: B

 Itemcode : AC1018

 Q18: In the case of gases, the viscosity with increase in temperature.

 A
 decreases

 B
 increases

С	has no change	
D	none of the above	
Cor	rect Ans: B	
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	ncode : AC1019 F: In case of ideal fluid, shear stress is zero when fluid is	
A	at rest.	
В	in motion.	
С	at rest or in motion.	
D	none of the above.	
Cor	rect Ans: C	
	ncode: AC1020 D: When meta centre of a body is below its centre of gravity, the body will be in	
A	stable equilibrium.	
В	unstable equilibrium.	
С	neutral equilibrium.	
D	any one of the above.	
Cor	rect Ans: B	
	 AC1021 An open rectangular tank 3 m wide, 4 m long and 2 m deep contains water for a depth of 1.75 m. Find the horizontal acceleration with which the tank has to move parallel to its length so that water is just on the verge of spilling out of the tank? 	
В	1.00 m/sec ² 1.116 m/sec ²	
С	1.166 m/sec ²	
D	1.226 m/sec ²	
Cor	rect Ans: D	
Itemcode : AC1022 Q22: Coefficient of velocity is the ratio of		
Α	theoretical velocity to actual velocity.	
В	actual velocity to theoretical velocity.	
С	any of the above.	
D	none of the above.	
Cor	rect Ans: B	
	ncode: AC1023 3: If there is an error of 2 % in water head measurement of a rectangular notch, the error in discharge will be of	
A	1%	
В	2%	
С	3%	
D	5%	
Cor	rect Ans: C	
	ncode : AC1024 4: In Cippoletti weir, the side slope is of	
A	8 ⁰ 2'	
B	100 27	

С	12 ⁰ 2′
D	14 ⁰ 2'
Correct Ans: D	

 Itemcode : AC1025

 Q25: In a syphon, a part of pipe line is.......

 A
 above the total energy line.

 B
 above the hydraulic gradient line.

 C
 any of the above.

 D
 none of the above.

 Correct Ans: B

| Itemcode : AC1027
| Q27: When available water head is less than 15 m, suitable type of turbine is
A	Pelton wheel.
B	Francis.
C	Kaplan.
any of the above.	
Correct Ans: C	

 Itemcode : AC1028

 Q28: The of a turbine is the speed of a turbine under a head of 1m so as to develop 1 horse power.

 A
 Specific power

 B
 Specific speed

 C
 Specific head

 D
 none of the above

 Correct Ans: B

Correct Ans: **B**

Itemcode : AC1031

Q31: For flexible pavement design, Curve D is for

- **A** 0 15 vehicles per day.
- **B** 15 45 vehicles per day.
- c 45 150 vehicles per day.
- **D** 150 450 vehicles per day.

Correct Ans: **D**

Itemcode : AC1032

Q32: The downward drag, which tends to reduce the useable pile capacity is called......

- A skin problem.
- **B** positive skin friction.
- c negative skin friction.
- **p** none of the above.

Correct Ans: C

Itemcode: AC1033

Q33: Grade beam in expansive soils is placed in such a way that its

- A top face should be at ground level.
- **B** bottom face should be at ground level.
- **c** bottom face should be at least 80 mm above ground level.
- No such specification is required.

Correct Ans: C

Itemcode: AC1034

Q34: Bearing capacity: $q_f = 1.2 c_T N_c + \gamma D N_q + 0.3 \gamma B N_{\gamma}$ is applicable for

- A square footing.
- **B** circular footing.
- **c** rectangular footing.
- b hexagonal footing.

Correct Ans: B

Itemcode: AC1035

Q35: Contact pressure distribution below a rigid foundation is parabolic having if foundation is on cohesionless soil.

- **A** maximum values at edges and minimum value at centre.
- **B** zero values at edges and maximum values at centre.
- c maximum values at edges and zero value at centre.
- **p** none of the above.

Correct Ans: B

Itemcode : AC1036

Q36: Critical hydraulic gradient, i_c is

- **A** (G 1) / (1 e)
- **B** (G + 1) / (1 + e)
- **c** (G 1) / (1 + e)
- **D** (G + 1) / (1 e)

Correct Ans: C

Itemcode : AC1037

Q37: A sand deposit is made up of three horizontal layers of equal thicknesses and permeability of k_1 , k_2 and k_3 . The resultant horizontal permeability will be

- **B** $k = k_1 + k_2 + k_3$
- **c** any one of the above.
- **D** none of the above.

Correct Ans: B

Itemcode : AC1038

Q38: Transition curve is a

- A vertical curve.
- **B** horizontal curve used in isolation.
- c vertical curve used in isolation.
- **p** horizontal curve used in between a tangent and a circular curve.

Correct Ans: **D**

Itemcode : AC1039

Q39: In theodolite surveying, is the process of turning the telescope about its horizontal axis through 180⁰ in the vertical plane thus bringing it upside down and making it to point exactly in the opposite direction..

- A Transiting
- B Centering
- **c** Swinging of Telescope
- changing face

Correct Ans: A

Itemcode : AC1040

Q40: When divisions of a vernier are increasing in the opposite direction of the main scale, such vernier is called a ...

- A Simple vernier.
- **B** direct vernier.
- c retrograde vernier.
- **D** double vernier.

Correct Ans: C

Itemcode : AC1041

Q41: Distance between any two consecutive contours is called

- A contour interval.
- **B** horizontal equivalent.
- c contour gap.
- none of the above.

Correct Ans: B

Itemcode : AC1042

Q42: From a point, if you move in any of the two opposite directions, reduced level of contours is decreasing, while moving in any of the two opposite directions normal to previous directions, reduced level of contours is increasing, such location is called

- A ridge.
- **B** valley.
- c lake or hill.
- Saddle.

Correct Ans: **D**

Itemcode: AC1043
Q43: If subsequent intermediate sight readings are increasing, it shows

A a plane land.

B an upward slope.

C a downward slope.

D un-even land.

Correct Ans: C

 Itemcode : AC1044

 Q44: A station is a point where

 A Dumpy level is set up.

 B staff is held and reading is taken during process of leveling.

 C either (A) or (B).

 D none of the above.

 Correct Ans: B

Itemcode : AC1047	Q47: A cantilever beam span 'I' is subjected to a couple 'M' at its free end, shear force in the beam is
A	constant (i.e. M/I).
B	linearly varying.
C	having parabolic variation.
D	zero everywhere.
Correct Ans: D	

| Itemcode : AC1048 | Q48: The rate of loading (w) per unit length on a beam is
A	EI (dy/dx)
B	EI (d²y/dx²)
C	EI (d³y/dx³)
D	EI (d⁴y/dx⁴)
Correct Ans: D	

Itemcode : AC1049

Q49: In a T-section, shear stress will be maximum at

A	top face of the section.
В	bottom face of the section
С	neutral axis of the section.
D	junction of web and flange of the section.
Correct Ans: C	

Itemcode: AC1050
Q50: To control deflection of a built up beam, which of the following option is preferable?

A place the I-sections side by side.

B place the I-sections one above the other.

C use cover plates along with option (A).

D any one of the above.

Correct Ans: B

| Itemcode : AC1051
| Q51: In case of plane stress problem, normal strain in the direction perpendicular to the considered plane is
A	zero.
B	non zero but depend on normal stresses.
C	non-zero but depend in shearing stress.
D	none of the above.
Correct Ans: B	

Itemcode: AC1052
Q52: Mechanical advantage is
A ratio of load to effort.
B ratio of distance moved by effort to distance moved by load.
C ratio of efficiency to velocity ratio.
D none of the above.

Correct Ans: A

Itemcode : AC1053

Q53: A screw jack is having efficiency

A less than 65%.

B less than 60%.

C less than 55%.

D less than 50%.

Correct Ans: D

Itemcode : AC1055
Q55: The geometrics of highway should be designed to provide at reasonable cost.

A maximum safety

B maximum efficiency

С	maximum efficiency and maximum safety		
D	optimal efficiency and maximum safety		
Cor	rect Ans: D		
	ncode: AC1056 : For calculation of stopping distances, the longitudinal friction coefficient values of Is recommended by IRC.		
A	0.15		
В	0.20		
c	0.30		
D	0.35 to 0.40		
	rect Ans: D		
COI	Tecc Alis. D		
	ncode : AC1057		
Q5	7: In transition curves, the radius as the length of the curve increases.		
Α	increases		
В	decreases		
С	remains constant		
D	no set pattern		
Cor	rect Ans: B		
Iter	ncode : AC1058		
	Coning of wheels is there as the wheels are coned at a slope of to prevent rubbing the inside face of the rail head and to		
	prevent lateral movement of the axle with its wheels.		
Α	1 in 20		
В	1 in 24		
С	1 in 25		
D	1 in 30		
Cor	Correct Ans: A		
Itor	ncode : AC1059		
	9: In India, are most commonly used.		
Α	Double headed rails		
В	Bull headed rails		
С	Flat footed rails		
D	any one of the above.		
Cor	rect Ans: C		
	ncode: AC1060		
	3: In railways, when gradient is steeper than, rack and pinion arrangement is adopted.		
Α	1 in 50		
В	1 in 45		
С	1 in 40		
D	1 in 30		
Cor	rect Ans: D		
Itemcode: AC1061			
	Q61: Average water consumption for flushing of latrines etc litres per day per person is considered.		
Α	15		
В	20		
С	25		
D	30		

Correct Ans: D Itemcode: AC1062 Q62: Maximum daily demand of water may be times of average daily demand 1.2 В 1.4 1.6 С D 1.8 Correct Ans: **D** Itemcode : AC1063 **Q63:** The discharge from an open well may be upto 18 m³/hour 22 m³/hour 25 m³/hour **D** 27 m³/hour Correct Ans: A Itemcode: AC1064 Q64: In a cross drainage work, when canal is above the drain, such cross drainage work is called A Aqueduct Level crossing **c** Super passage **D** Syphon Aqueduct Correct Ans: A,D Itemcode : AC1065 **Q65:** The useful life of RCC pipes is considered as 15 years. 25 years. 40 years. **D** 75 years. Correct Ans: **D Q66:** The permissible pH value for public supplies should not be less than **A** 6.80 **B** 6.75 С 6.70 6.60 Correct Ans: S (S Denotes question scrapped and weight-age to all) Itemcode: AC1067 **Q67:** Tentative cost of distribution system in water supply scheme 35% В 40% 45% 50% Correct Ans: **D**

	mcode : AC1068
Q6	8: Main and trunk sewers are designed for service life of years.
Α	10 - 20
В	20 - 30
С	30 - 40
D	40 - 50
Cor	rrect Ans: D
	m <u>code</u> : AC1069 9: Non-scouring limiting velocity for earthen channels is m/sec .
A	0.6 - 1.2
В	1.5 - 2.5
С	2.5 – 3.0
D	3.0 - 4.0
Cor	rrect Ans: A
	mcode: AC1070 0: Sewers of 375 mm diameter are designed to run at at ultimate peak designed flow.
Α	1/2 depth
В	2/3 depth
С	3/4 depth
D	4/5 depth
Cor	rrect Ans: A
	mcode: AC1071 1: Sewer pipe sections are tested between manhole to manhole under a test pressure of about head of water. 1.2 m
В	1.5 m
С	1.0 m
D	0.8
Cor	rrect Ans: B
	ncode: AC1072 2: In grit chambers, the velocity of flow reduces tom/sec.
A	0.3
В	0.4
С	0.5
D	0.6
Cor	rrect Ans: A
	mcode: AC1073 3: For the design of Septic Tanks, the rate of sludge accumulation has been recommended as litres/person/year.
A	30
В	35
С	40
D	45
	rect Ans: A
	Total File
	mcode: AC1074 4: The rate of hydraulic loading for conventional trickling filter may be million litres per hectare per day.

A 12

В	16
С	20
D	28
Co	rrect Ans: D
	mcode : AC1075 5: A good brick earth may contain Sand upto
Α	50%
В	60%
С	65%
D	70%
Co	rrect Ans: A
	mcode: AC1076 6: are made from refractory clay mixed with crushed pottery and stone.
Α	Porcelain
В	Stoneware
С	Terracota
D	Earthenware
Co	rrect Ans: B
	mcode : AC1077
Q7	7: Kankar lime is used for
Α	structural purposes.
В	plastering.
С	white washing.
D	masonry mortars.
Co	rrect Ans: D
	mcode : AC1078 8: Latest specifications of 53 grade cement may be referred from
A	IS: 8112.
В	IS: 15269.
С	IS: 269.
D	IS: 1489.
	rrect Ans: C
Col	Tecc Alls. C
Itemcode : AC1079 Q79: The duration of the project at which total cost of the project is minimum is called	
Α	Minimum duration.
В	Most economic duration.
С	most effective duration.
D	Optimum duration.
Co	rrect Ans: D
	mcode: AC1080 O: When float of an activity is negative such activity is called
A	Critical Activity.
В	Super Critical Activity.
С	Sub Critical Activity.

D	none of the above.		
Cor	Correct Ans: B		
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	ncode: AC1081 1: Who made the film Yak: Ship of the Mountain?		
A	Aparna Negi		
В	Neeru Negi		
С	Renu Negi		
D	Veena Negi		
Cor	rect Ans: C		
Iter	ncode : AC1082		
	2: In which district of H.P. is Una-so lake ?		
A	Una		
В	Chamba		
С	Lahaul - Spiti		
D	Kinnaur		
Cor	rect Ans: C		
	ncode: AC1083		
	3: Which river's tributary is Jalal stream ?		
Α	Yamuna		
В	Beas		
С	Satluj		
D	Ravi		
Cor	Correct Ans: A		
Thor	mcode : AC1084		
	4: According to 2011 Census which District of H.P. has the lowest percentage of Scheduled Castes population ?		
Α	Una		
В	Bilaspur		
С	Lahaul - Spiti		
	Hamirpur		
D	_ '		
Cor	rrect Ans: C		
<u>Iter</u>	ncode : AC1085		
Q8	According to H.P. Government notification of 24-10-1994 which of the following is included in the category of OBCs?		
A	Banjara		
В	Kumhar		
С	Teli		
D	Thathera		
Cor	rrect Ans: B		
	<u>Itemcode</u> : AC1086 Q86: Which dialect is spoken in Rampur and Kotgarh regions of H.P. ?		
A	Kochi		
В	Brari		
С	Kiran		
D	Kirni		
Cor	rect Ans: A		

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	ncode : AC1087 7: In which Vidhan Sabha elections in H.P. did the B.S.P. win a seat ?	
A	2003	
В	2007	
С	2012	
D	2017	
Cor	rect Ans: B	
Itor	<u>mcode</u> : AC1088	
	3: In which district of H.P. is Gamgul - Siahlehi sanctuary ?	
A	Kullu	
В	Shimla	
С	Solan	
D	Chamba	
Cor	rect Ans: D	
	ncode: AC1089 Which of the following is the seat of Buddhist monasteries?	
A	Taleru	
В	Sumdo	
С	Tabo	
D	Sangla	
Cor	rect Ans: C	
Itemcode : AC1090 Q90: Who invited the Dalai Lama to Mcleodganj around 1960 AD ?		
A B	B.C. Sanyal S.S. Boparai	
С	Norah Richards	
D	N.N. Nowrojee	
	rect Ans: D	
	ncode: AC1091 1: According to 2011 census which state in India has the lowest literacy?	
Α	Chhatisgarh	
В	Bihar	
С	Jharkhand	
D	Rajasthan	
Cor	rect Ans: B	
	ncode: AC1092 2: Who is the Governor of Karnataka ?	
Α	Vajubhai Vala	
В	K. Siddaramaiah	
С	K. Rosaiah	
D	Shanker Singh Waghela	
Cor	rect Ans: A	
	ncode: AC1093	

A INS Ganga

В	INS Ranjit		
С	INS Kamorta		
D	INS Talwar		
Cor	rect Ans: C		
	mcode: AC1094 4: Which agency carried out the conservation and restoration work of Humayun's Tomb in Delhi? the Aga Khan Foundation		
В	Getty Foundation		
С	Lakshmi Mitta Foundation		
D	Dalmia - Bharat Gruop		
	rect Ans: A		
Itemcode: AC1095 Q95: What will be the approximate length of the proposed Zojila tunnel in J and K?			
Α	9 kms		
В	11 kms		
С	14 kms		
D	17 kms		
Cor	rrect Ans: C		
	Itemcode: AC1096 Q96: Which country's President is Nicolas Maduro (May 21, 2018)?		
Α	Venezuela		
В	Colombia		
С	Guatemala		
D	Honduras		
Cor	rrect Ans: A		
Itemcode : AC1097 Q97: Which is the country of Meghan Markle's origin (who married Prince Harry recently)			
A	United Kingdom		
В	France		
С	Germany		
D	USA		
Cor	rrect Ans: D		
	mcode : AC1098 8: Which country is called the land of mid - night sun ? Finland		
В	Norway		
С	Sweden		
D	Denmark		
Cor	Correct Ans: B		
	mcode : AC1099 9: Which planet is known as god of war ?		
A	Saturn		
В	Jupiter		
С	Mars		

D	Venus		
Correct Ans: C			
Itemcode: AC1100 Q100: What is the currency of Italy?			
Α	Lira		
В	Euro		
С	Forint		
D	Lari		
Cor	Correct Ans: B		