



SSC JE 2019 Tier-1 CIVIL ENGINEERING



Memory Based

Questions with Solutions

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SSC JE 2019 Civil Subject Weightage Analysis

Subject Analysis Shift-2 (30-10-2020) (Memory Based)					
Subject	Difficulty Level	No. of Questions			
Building Materials & Concrete Technology	Moderate	15			
Estimation, Costing and Valuation	Easy	8-9			
Surveying	Easy	6-7			
Soil Mechanics	Easy	10-11			
Fluid Mechanics & Hydraulics	Moderate	5-6			
Irrigation Engineering	Difficult	4-5			
Transportation Engineering	Difficult	8-10			
Environmental Engineering	Easy	6-7			
Theory of Structures (SOM+SA)	Easy	15-16			
RCC Design	Moderate	6-7			
Steel Design	Difficult	5-6			
Reasoning	Difficult	50			
General Awareness	Difficult	50			
OVERALL	Moderate	200 Qs			

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CIVIL ENGINEERING

Questions Shift-II (Memory Based)

- 1. If porosity = 25%. What is the void ratio?
- Sol. Porosity = e/(1+e)

0.25 = = e/(1+e)

e = 0.33

2. Slope = Area of BMD/EI theory is given by whom?

Sol. Moment area theorem given by Mohr.

- 3. What is the Full form of CETP?
- Sol. Common effluent treatment plant
- 4. Degree of Kinematic Indeterminacy of a propped cantilever beam is
- Sol. If there is a roller then 2 if pin support then 1
- 5. Find Ka and K_p if $\Phi = 30$ degrees.

Sol. $K_a = \frac{1 - \sin \phi}{1 + \sin \phi}$

$$\mathsf{K}_{\mathsf{p}} = \frac{1 + \sin \phi}{1 - \sin \phi}$$

 $k_a = \frac{1}{3}$ and $k_p=3$

5. Relation between Cc, Cd and Cv?

Sol. Coefficient of discharge (Cd) = Coeff. of flow/velocity (Cv) x Coeff of contraction (Cc)

- 6. Max. strain allowed in LSM is ?
- Sol. 0.0035
- 7. Which of these components makes cement unsound?
- Sol. Lime: The function of lime is that it is the main constituent for manufacturing of cement which imparts cementing property to cement. Lime imparts strength and soundness to the cement. If it is present in excess quantity, it makes the cement unsound (causes it to expand and disintegrate).
- 8. BS and HI are given. Calculate the RL.

Sol. Height of collimation (H of C) = reduced level(**R.L.**) + backsight (**B.S.**)

- 9. Calculate the LAG Distance only in a SSD Problem.
- Sol. LAG Distance = v * t
- 10. If latitude and departure are negative, then whole circle bearing is?
- Sol. 180 to 270 degrees. WC
- 11. WCB = 132 degrees given. Find the Reduced bearing.
- Sol. WCB = 132° => Second quadrant (SE) => Angle = $180 132^\circ$ => RB = S48°E



12. Find specific energy. Given depth of flow = 2m, width of channel = 5m and discharge= 10 cumecs.

Sol.
$$y + \frac{v^2}{2g}$$

 $v = \frac{Q}{A} = \frac{10}{5 \times 2} = 1m / \text{sec}$
 $2 + \frac{1^2}{2 \times 9.81} = 2.0509m$

NON-TECH

- 1. How resistivity gets affected by temperature?
- Sol. Resistivity increases with increasing temperature in conductors and decreases with increasing temperature in insulators.
- 2. Is the mirror image rotational or not?
- 3. There are 100 people who speak different languages. 40 people speak Bengali and 80 speak Hindi. Find how many people speak both Bengali and Hindi?
- 4. FIRE is code as 1123789 then DUCK is coded as ?

SSC JE 2019 Civil Expected Cutoff

Expected Cutoff (SSC JE Tier-1)							
Years	General	EWS	OBC	SC	ST		
2019 (Shift-2) (30-10-2020)	119	115	117	101	101		
2019 (Shift-1) (30-10-2020)	121	116	120	104	104		
2019 (29-10-2020)	125	119	123	110	110		
2018	127.40	118.99	122.91	107.61	107.01		
2017	117	-	110.75	101.75	105		
2016	100	-	92.50	84.50	85.50		
2015	103.75	-	91.25	88	87.75		
2014	93.75	-	82	75.75	70		
2013	78	-	70.50	66.25	63.50		

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