Graduate Aptitude Test in Engineering 2020 09th Feb S1

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Subject	CE1 CIVIL ENGINEERING

Section : General Aptitude

Q.1 Select the word that fits the analogy:

Fuse : Fusion :: Use : _____

Options 1. Usage
2. Uses
3. User
4. Usion

Question ID : 2672365808
Status : Answered
Chosen Option : 1

Q.2 The American psychologist Howard Gardner expands that human intelligence can be sub-categorized into multiple kinds, in such a way that individuals differ with respect to their relative competence in each kind. Based on this theory, modern educationists must be researching multi-dimensional curriculum and evaluation parameters that enable development and assessment of multiple intelligences.

Which of the following statements can be inferred from the above text?

Options 1. Howard Gardner wants to develop and assess the theory of multiple intelligences
2. Modern educationists want to develop and assess the theory of multiple intelligences.
3. Modern educationists insist that the teaching curriculum and evaluation needs to be multi-dimensional.
4. Howard Gardner insists that the teaching curriculum and evaluation needs to be multi-dimensional.

Question ID : 2672365811
Status : Not Answered
Chosen Option : --

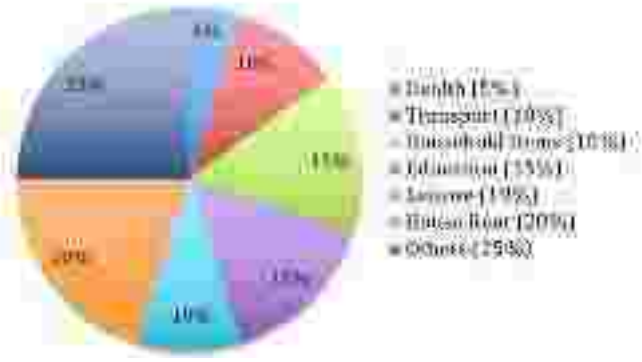
Q.3 Five friends P, Q, R, S and T went camping. At night, they had to sleep in a row inside the tent. P, Q and T refused to sleep next to R since he snored loudly. P and S wanted to avoid Q as he usually hogged people in sleep.

Assuming everyone was satisfied with the sleeping arrangements, what is the order in which they slept?

Options 1. QRSPT
2. SPRTQ
3. QTSPR
4. RSPTQ

Question ID : 2672365812
Status : Answered
Chosen Option : 3

Q.4 The total expenditure of a family on different activities in a month is shown in the pie-chart. The extra money spent on education as compared to transport (in percent) is_____



Options 1. 5
2. 33.3
3. 100
4. 50

Question ID : 2672365815
Status : Answered
Chosen Option : 4

Q.5 If 0, 1, 2, ..., 7, 8, 9 are coded as O, P, Q, ..., V, W, X, then 45 will be coded as_____

Options 1. SS
2. TS
3. ST
4. SU

Question ID : 2672365809
Status : Answered
Chosen Option : 3

Q.6 The sum of two positive numbers is 100. After subtracting 5 from each number, the product of the resulting numbers is 0. One of the original numbers is

Options 1. 85
2. 80
3. 90
4. 95

Question ID : 2672365810
Status : Answered
Chosen Option : 3

Q.7 It is a common criticism that most of the academicians live in their _____ so, they are not aware of the real life challenges.

Options 1. homes
2. glass palaces
3. ivory towers
4. [redacted]

Question ID : 2672365806
Status : Answered
Chosen Option : 3

Q.8 The unit's place in 26591749^{110016} is _____.

Options 1. 3
2. 6
3. 1
4. 9

Question ID : 2672365814
Status : Marked For Review
Chosen Option : 3

Q.9 Insert seven numbers between 2 and 34 such that the resulting sequence including 2 and 34 is an arithmetic progression. The sum of these inserted seven numbers is

Options 1. 126
2. 124
3. 120
4. 130

Question ID : 2672365813
Status : Not Answered
Chosen Option : --

Q.10 His hunger for reading is insatiable. He reads indiscriminately. He is most certainly a/an reader.

Options 1. wise
2. precocious
3. voracious
4. all-round

Question ID : 2672365807
Status : Answered
Chosen Option : 3

Section : CE CIVIL ENGINEERING

Q.1 During the process of hydration of cement, due to increase in Dicalcium Silicate (C_2S) content in cement clinker, the heat of hydration

Options 1. decreases
2. does not change
3. intially decreases and then increases
4. increases

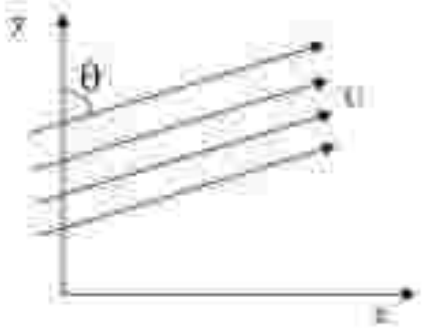
Question ID : 2672365823
Status : Answered
Chosen Option : 4

Q.2 A river has a flow of 1000 million litres per day (MLD), BOD of 5 mg/litre and Dissolved Oxygen (DO) level of 8 mg/litre before receiving the wastewater discharge at a location. For the existing environmental conditions, the saturation DO level is 10 mg/litre in the river. Wastewater discharge of 100 MLD with the BOD of 200 mg/litre and DO level of 2 mg/litre falls at that location. Assuming complete mixing of wastewater and river water, the immediate DO deficit (in mg/litre, *round off to two decimal places*) is

Answer : Given 3.28

Question ID : 2672365840
Status : Marked For Review

Q.3 Uniform flow with velocity U makes an angle θ with the y-axis, as shown in the figure



The velocity potential (ϕ) is

Options 1. $\pm U(y\sin\theta - x\cos\theta)$
2. $\pm U(y\sin\theta + x\cos\theta)$
3. $\pm U(x\sin\theta - y\cos\theta)$
4. $\pm U(x\sin\theta + y\cos\theta)$

Question ID : 2672365829
Status : Answered
Chosen Option : 2

Q.4 The true value of ln(2) is 0.69. If the value of ln(2) is obtained by linear interpolation between ln(1) and ln(6), the percentage of absolute error (*round off to the nearest integer*), is

Options 1. 84
2. 35
3. 69
4. 48

Question ID : 2672365818
Status : Not Answered
Chosen Option : --

Q.5 In the following partial differential equation, θ is a function of t and z, and D and K are functions of θ

$$D(\theta)\frac{\partial^2\theta}{\partial z^2}+\frac{\partial K(\theta)}{\partial z}-\frac{\partial\theta}{\partial t}=0$$

The above equation is

Options 1. a second degree non-linear equation
2. a second degree linear equation
3. a second order linear equation
4. a second order non-linear equation

Question ID : 2672365816
Status : Answered
Chosen Option : 2

Q.6 A fully submerged infinite sandy slope has an inclination of 30° with the horizontal. The saturated unit weight and effective angle of internal friction of sand are 18 kN/m³ and 38°, respectively. The unit weight of water is 10 kN/m³. Assume that the seepage is parallel to the slope. Against shear failure of the slope, the factor of safety (*round off to two decimal places*) is

Given 2.8
Answer :

Question ID : 2672365838
Status : Answered

Q.7 The probability that a 50 year flood may **NOT** occur at all during 25 years life of a project (*round off to two decimal places*), is

Given 2
Answer :

Question ID : 2672365833
Status : Marked For Review

Q.8 The data for an agricultural field for a specific month are given below:

Pan Evaporation	= 100 mm
Effective Rainfall	= 20 mm (after deducting losses due to runoff and deep percolation)
Crop Coefficient	= 0.4
Irrigation Efficiency	= 0.5

The amount of irrigation water (in mm) to be applied to the field in that month, is

Options 1. 20
2. 0
3. 80
4. 40

Question ID : 2672365830
Status : Not Answered
Chosen Option : --

Q.9 An amount of 35.07 mg HCl is added to distilled water and the total solution volume is made to one litre. The atomic weights of H and Cl are 1 and 35.5, respectively. Neglecting the dissociation of water, the pH of the solution, is

Options 1. 2.01
2. 3.01
3. 2.50
4. 3.50

Question ID : 2672365832
Status : Not Answered
Chosen Option : --

Q.10 In a soil investigation work at a site, Standard Penetration Test (SPT) was conducted at every 1.5 m interval up to 30 m depth. At 3 m depth, the observed number of hammer blows for three successive 150 mm penetrations were 8, 6 and 9, respectively. The SPT N-value at 3 m depth, is

Options 1. 23
2. 15
3. 14
4. 17

Question ID : 2672365826
Status : Answered
Chosen Option : 1

Q.11 Velocity of flow is proportional to the first power of hydraulic gradient in Darcy's law. This law is applicable to

Options 1. transitional flow in porous media

2. laminar as well as turbulent flow in porous media

3. turbulent flow in porous media

4. laminar flow in porous media

Question ID : 2672365827
Status : Not Answered
Chosen Option : --

Q.12 A 4 m wide rectangular channel carries 6 m³/s of water. The Manning's 'n' of the open channel is 0.02. Considering $g = 9.81\ m/s^2$, the critical velocity of flow (in m/s, round off to two decimal places) in the channel, is _____.

Given 3.8
Answer :

Question ID : 2672365839
Status : Marked For Review

Q.13 In a two-dimensional stress analysis, the state of stress at a point 'P' is

$$[\sigma] = \begin{bmatrix} \sigma_{xx} & \tau_{xy} \\ \tau_{xy} & \sigma_{yy} \end{bmatrix}$$

The necessary and sufficient condition for existence of the state of pure shear in the point 'P' is

Options 1. $\sigma_{xx} + \sigma_{yy} = 0$

2. $\sigma_{xx}\sigma_{yy} - \tau_{xy}^2 = 0$

3.

4.

Question ID : 2672365822
Status : Not Answered
Chosen Option : --

Q.14

Given 5
Answer :

Question ID : 2672365836
Status : Answered

Q.15

Options 1.

2.

3.

4.

Question ID : 2672365817
Status : Answered
Chosen Option : 4

Q.16

Given 9
Answer :

Question ID : 2672365835
Status : Answered

Q.17

Options 1.

2.

3.

4.

Question ID : 2672365820
Status : Not Answered
Chosen Option : --

Q.18

Options 1.

2.

3.

4.

Question ID : 2672365825
Status : Not Answered
Chosen Option : --

Q.19

Given --
Answer :

Question ID : 2672365837
Status : Not Answered

Q.20

Given 231.4
Answer :

Question ID : 2672365834
Status : Answered

Q.21

Options 1.

2.

3.

4.

Question ID : 2672365824
Status : Answered
Chosen Option : 3

Q.22

Options 1.

2.

3.

4.

Question ID : 2672365819

Status : Answered

Chosen Option : 3

Q.23

Options 1.

2.

3.

4.

Question ID : 2672365828

Status : Answered

Chosen Option : 4

Q.24

Options 1.

2.

3.

4.

Question ID : 2672365831

Status : Not Answered

Chosen Option : --

Q.25

Options 1.

2.

3.

4.

Question ID : 2672365821

Status : Not Answered

Chosen Option : --

Q.26

Given --

Answer :

Question ID : 2672365860

Status : Not Answered

Q.27

Given 45

Answer :

Question ID : 2672365859

Status : Answered

Q.28

Options 1.

2.

3.

4.

Question ID : 2672365852

Status : Not Answered

Chosen Option : --

Q.29

Given 60

Answer :

Question ID : 2672365870

Status : Answered

Q.30

Options 1.

2.

3.

4.

Question ID : 2672365850

Status : Not Answered

Chosen Option : --

Q.31

Options 1.

2.

3.

4.

Question ID : 2672365843

Status : Answered

Chosen Option : 4

Q.32

Options 1.

2.

3.

4.

Question ID : 2672365845

Status : Answered

Chosen Option : 2

Q.33

Options 1.

2.

3.

4.

Question ID : 2672365841

Status : Not Answered

Chosen Option : --

Q.34

Given 23.48

Answer :

Question ID : 2672365858

Status : Answered

Q.35

Given --

Answer :

Question ID : 2672365867

Status : Not Answered

Q.36

Options 1.

2.

3.

4.

Question ID : 2672365848

Status : Marked For Review

Chosen Option : 4

Q.37

Given 4

Answer :

Question ID : 2672365866

Status : Answered

Q.38

Given --

Answer :

Question ID : 2672365856

Status : Not Answered

Q.39

Options 1.

2.

3.

4.

Question ID : 2672365842

Status : Not Answered

Chosen Option : --

Q.40

Given 250

Answer :

Question ID : 2672365869

Status : Answered

Q.41

Given 36

Answer :

Question ID : 2672365862

Status : Answered

Q.42

Given 120

Answer :

Question ID : 2672365857

Status : Marked For Review

Q.43

Given 3.8

Answer :

Question ID : 2672365864

Status : Answered

Q.44

Options 1.

2.

3.

4.

Question ID : 2672365846

Status : Not Answered

Chosen Option : --

Q.45

Options 1.

2.

3.

4.

Question ID : 2672365847

Status : Not Answered

Chosen Option : --

Q.46

Given --

Answer :

Question ID : 2672365863

Status : Not Answered

Q.47

Options 1.

2.

3.

4.

Question ID : 2672365844

Status : Not Answered

Chosen Option : --

Q.48

Given 1

Answer :

Question ID : 2672365854

Status : Answered

Q.49

Options 1.

2.

3.

4.

Question ID : 2672365853

Status : Not Answered

Chosen Option : --

Q.50

Options 1.

2.

3.

4.

Question ID : 2672365849

Status : Not Answered

Chosen Option : --

Q.51

Given 68.5

Answer :

Question ID : 2672365861

Status : Answered

Q.52

Options 1.

2.

3.

4.

Question ID : 2672365851

Status : Not Answered

Chosen Option : --

Q.53

Given --

Answer :

Question ID : 2672365868

Status : Not Answered

Q.54

Given --

Answer :

Question ID : 2672365865

Status : Not Answered

Q.55

Given -5

Answer :

Question ID : 2672365855

Status : Answered