# RVUNL 

AEN \& JEN Civil Engineering

## Mini Mock Challenge

 (July 30th - July 31st 2021)
## Questions \&

 Answer Key1. The apparatus used for determining the Soundness of cement is
A. Slump cone
B. Le Chatelier apparatus
C. Vicat's needle
D. UTM

Ans. B
2. Which of the following is not a non-destructive test?
A. Rebound Hammer Test
B. Surface Hardness Test
C. Ultrasonic Pulse Velocity Test
D. Soundness Test

Ans. D
3. After 24 hours immersion in cold water, water absorption by weight shall not exceed
$\qquad$ percent of the dry weight of the brick?
A. 40
B. 20
C. 25
D. 30

Ans. B
4. Brick earth contains major quantity of
A. Silica
B. Aluminium
C. Calcium
D. Magnesium

Ans. A
5. Acoustics of an auditorium is considered to be excellent when its reverberation time is between
A. 0.50 and 1.50 s
B. 1.50 and 2.00 s
C. 2.00 and 3.00 s
D. 3.00 and 5.00 s

Ans. A
6. In PERT analysis, the time estimates of activities and probability of their occurrence follow
A. Normal distribution curve
B. Poisson's distribution curve
C. Beta distribution curve
D. None of the above

Ans. C
7. For stability of floating bodies, the meta-centre should be?
A. above the centre of buoyancy
B. below the centre of gravity
C. below the centre of buoyancy
D. above the centre of gravity

Ans. D
8. If a venturimeter having pipe diameter to throat diameter ratio $2: 1$ has a difference of head observed as 50 cm when observed in an inverted u-tube manometer filled with liquid having density of $12.6 \mathrm{~g} / \mathrm{cc}$. If the head loss occurred in the section is 1.4 m find the coefficient of discharge of the venturimeter.
A. 0.875
B. 0.91
C. 0.88
D. 0.97

Ans. C
9. Velocity component $u=\left(\lambda x y^{3}-x^{2} y\right), v=x y^{2}-6 y^{4}$, then the value of $\lambda$ for possible flow field involving steady incompressible flow is
A. 0
B. 1
C. 6
D. 24

Ans. D
10. Reduced level of a station is given as:
A. Height of Instrument - Back Sight
B. Height of Instrument - Fore Sight
C. Height of Instrument - Rise
D. Height of Instrument - Fall

Ans. B
11. The quadratic bearing of a lone is $530^{\circ} 0^{\prime} 0^{\prime \prime} \mathrm{W}$, its value in whole circle bearing is
A. $30^{\circ}$
B. $40^{\circ}$
C. $100^{\circ}$
D. $210^{\circ}$

Ans. D
12. If the focal length of the objective glass is 210 mm , stadia intercept is 3 mm and instance of the instrument axis from the center of the object is 180 mm then the additive and multiplying constant are
A. $390 \mathrm{~mm}, 70 \mathrm{~mm}$
B. $60 \mathrm{~mm}, 240 \mathrm{~mm}$
C. $240 \mathrm{~mm}, 60 \mathrm{~mm}$
D. $70 \mathrm{~mm}, 390 \mathrm{~mm}$

Ans. A
13. For $45^{\circ}$ bent up bar, the additional length for one bent up is
A. 0.36 d
B. 0.42 d
C. 0.56 d
D. 0.62 d

Ans. B
14. In the absence of detail design, the percentage of steel in concrete in the beams can be taken as
A. 0.7 to $1 \%$
B. 1 to $2 \%$
C. 1 to $5 \%$
D. 0.5 to $0.8 \%$

Ans. B
15. The Thermal stress is given by Where

E- Elastic modulus
T- Temperature difference
$\infty$ - Co-efficient of thermal expansion
A. $\infty L T$
B. $\infty T E$
C. $\frac{E T}{\infty}$
D. $\frac{1}{E \propto T}$

Ans. B
16. If E is the modulus of elasticity and I is the moment of inertia, then the flexural rigidity or flexural stiffness of the member is
A. $\frac{E}{I}$
B. EI
C. $\frac{I}{E}$
D. $\mathrm{EI}^{2}$

Ans. B
17. If E is young' modulus and I is moment of inertia, then the expression $E I \frac{d^{3} y}{d x^{3}}$ at any section for a beam is equal to
A. load intensity at the section
B. shear force at the section
C. bending moment at the section
D. slope at the section

## Ans. B

18. The truss shown below is an example of which of the following?

A. Perfect frame
B. Redundant Frame
C. Deficient Frame
D. Data Insufficient

Ans. A
19. A two hinged semi-circular arch is subjected to concentrated loads $P$ and $2 P$ respectively at two points radius vectors to which make angle $30^{\circ}$ and $45^{\circ}$ with the horizontal. Value of horizontal thrust is given by:
A. $0.5 \frac{\mathrm{P}}{\pi}$
B. $\frac{P}{\pi}$
C. $1.25 \frac{\mathrm{P}}{\pi}$
D. $1.5 \frac{\mathrm{P}}{\pi}$

Ans. C
20. A soil profile is shown in figure below. If a uniformly distributed load of $54 \mathrm{KN} / \mathrm{m}^{2}$ is applied at the ground surface and the clay is normally consolidated, then the settlement of the clay layer caused due to primary consolidation is. [Take $Y_{w}=10 \mathrm{kN} / \mathrm{m}^{2}$ ]

A. 16.2 cm
B. 18.5 cm
C. 20.5 cm
D. 9.4 cm

Ans. B
21. The ultimate bearing capacity of a soil having depth 1.5 m was found to be $856 \mathrm{kN} / \mathrm{m}^{2}$. If the unit weight of the soil is $17.5 \mathrm{kN} / \mathrm{m}^{3}$, the net ultimate bearing capacity of the soil will be
A. $835.24 \mathrm{kN} / \mathrm{m}^{2}$
B. $829.75 \mathrm{kN} / \mathrm{m}^{2}$
C. $815.42 \mathrm{kN} / \mathrm{m}^{2}$
D. $803.24 \mathrm{kN} / \mathrm{m}^{2}$

Ans. B
22. Which of the following statements are regarding Direct Shear test is/are correct:

1. This test is more suitable for cohesion less soil
2. Failure of the soil sample takes place along the weakest plane
3. Mohr's circle can not be drawn for stress conditions before failure of the soil sample.
4. This test can be performed for all the three drainage conditions
A. 1, 3, 4 only
B. 1, 2, 4 only
C. 2, 3, 4 only
D. 1, 2, 3, 4

Ans. A
23. In a high rate trickling filter, the problem of ponding can be solved by
A. Raking and chlorination
B. Chlorination and supply of air
C. Flooding
D. Raking and air

Ans. A
24. The units in which both sedimentation \& digestion process of sludge take places simultaneously is
A. skimming tank
B. imhoff tank
C. detritus tank
D. digestion tank

Ans. B
25. A reinforced cantilever beam of span 4 m . has cross-section of $150 \times 500 \mathrm{~mm}$. if checked for lateral stability and deflection, the beam will
A. Fail in deflection only
B. fail in lateral stability only
C. fail in both deflection and later stability
D. satisfy the requirements of deflection and lateral stability

Ans. C
26. The limiting tensile percentage reinforcement, $p t$, in WSM for a singly reinforced balanced rectangular section is $\qquad$ _
[Take M20 grade concrete and Fe415 grade steel]
A. 0.54
B. 0.44
C. 0.24
D. 0.34

Ans. B
27. The value of maximum effective slenderness ratio for a steel member carrying compressive loads resulting from dead loads and live loads is
A. 200
B. 180
C. 150
D. 300

Ans. B
28. When two plates are placed end to end and are joined by two cover plates, the joint is known as $\qquad$ -.
A. lap joint
B. butt joint
C. chain riveted lap joint
D. double cover butt joint

Ans. D
29. The value of the property (without being dismantled) at the end of the useful life period is known as $\qquad$ -
A. Scrap value
B. Salvation value
C. Junk value
D. Book value

Ans. B
30. An axonometric drawing which has all three axes divided by equal angles is:
A. Dimetric
B. Trimetric
C. Orthographic
D. Isometric

Ans. D
31. In the following question, select the related word from the given alternatives.

Farmer : Field : : Painter : ?
A. Gallery
B. Stage
C. Theatre
D. Shop

Ans. A
32. In the following pattern of figures, find the next number?

A.

B.

C.

D.


Ans. A
33. Shalini walked 15 m towards south, took a right turn and walked 3 m . She took a right turn again and walked 15 m before stopping. Which direction did Shalini face after stopping?
A. West
B. South
C. East
D. North
E. cannot be determined

Ans. D
34. In the following question, select the word which cannot be formed using the letters of the given word.
IMPRISONMENT
A. PRISON
B. SONNET
C. IMPRESSION
D. MOMENT

Ans. C
35. The Indian Parliament was attacked by terrorists in which of the following year?
A. 2000
B. 2001
C. 2002
D. 2003

Ans. B
36. What is the modern name of Drishadvati river (rig Vedic)?
A. Saraswati
B. Krumu
C. Ghagghar
D. Gomal

Ans. C
37. The battle of Tarain held between which of the following forces?
A. Ghuri- Chauhan Rajput
B. Hemu- Chauhan Rajput
C. Chauhan Rajput- Akbar
D. None of the above

Ans. A
38. Which of these ages is known as hunting and food gathering stage ?
A. Palaeolithic Age
B. Mesolithic Age
C. Neolithic Age
D. None of these

Ans. A
39. The Indian monument recently inscribed in the UNESCO's World Heritage List is:
A. Jantar Mantar of Ujjain
B. Jantar Mantar of Varanasi
C. Jantar Mantar of Delhi
D. Jantar Mantar of Jaipur

Ans. D
40. Consider the following statements.

1) The literacy rate of Rajasthan is $66.11 \%$.
2) Life Expectancy at the birth of Rajasthan is 67.9 years.
3) Sex Ratio of Rajasthan is 932 per 1000 males.

With reference to Census 2011, which of the following statement are correct?
A. 1 and 2
B. 2 and 3
C. 1 and 3
D. All of the above

Ans. A
41. Rajasthan state's first lady patrolling team deployed in which among the following city?
A. Jaipur
B. Ajmer
C. Kota
D. Udaipur

Ans. D
42. Which among the following railway station is awarded by silver rating for Environment protection?
A. Jodhpur
B. Bikaner
C. Jaipur
D. Sawai Madhopur

Ans. C
43. Which of the following cities have Municipal Corporation in Rajasthan?
i. Jaipur
ii. Jodhpur
iii. Bikaner
iv. Jaisalmer
v. Bharatpur
vi. Ajmer
vii. Kota
viii. Bundi
ix. Udaipur
x. Barmer
A. i, ii, iii, v, vi, vii, ix
B. i, iii, iv, v, viii, ix, $x$
C. i, ii, iii, v, vi, viii, ix
D. i, ii, v, vi, vii, ix

Ans. A
44. For the safety of women while travelling "Vasundhara Sakhi Mahila Vahan" is launched. It is related to which vehicle?
A. Bus
B. Auto
C. E-rickshaw
D. Cycle

Ans. C
45. Tilwara, a Mesolithic site, is situated on the bank of which river?
A. Saraswati
B. Ghaghhar
C. Luni
D. Bhogavo

Ans. C
46. 'Battle of Sarangpur' was fought in which year?
A. 1438
B. 1436
C. 1439
D. 1437

Ans. D
47. Who established the city "Udaipur"?
A. Udai Singh
B. Rana Vikramaditya
C. Rana Pratap
D. None of these

Ans. A
48. The Battle of Haldighati was a battle fought on-
A. 18 June 1576
B. 18 June 1577
C. 18 June 1578
D. 18 June 1579

Ans. A
49. Match the following.

List - I
DAMS

1) Rana Pratap Sagar Dam
2) Mahi Bajaj Dam
3) Bisalpur Dam
4) Jawai Dam

List - II
CHARACTERISTICS
A) Built by Maharaja Umaid Singh
B) the major source of drinking water supply to Jaipur
C) the Second Dam of Chambal Valley Project
D) Second Largest Dam of Rajasthan
A. 1-A; 2-B; 3-C; 4-D
B. 1-C; 2-D; 3-B; 4-A
C. 1-D; 2-B; 3-C; 4-A
D. 1-B; 2-C; 3-D; 4-A

Ans. B
50. Rajasthan's first biogas CNG plant is opened in which of the following district recently?
A. Bhilwara
B. Banswara
C. Pratapgarh
D. Chittorgarh

Ans. A
51. Loamy soil is Important for which crops?
A. Cotton and cash crops
B. Tobacco
C. Bajra
D. None of above

Ans. C
52. When was the ordinance on Rajasthan State Public Commission promulgated?
A. 16th August, 1949
B. 17th August, 1949
C. 18th August, 1949
D. 19th August, 1949

Ans. A
53. Where would be the headquarter of Maharana Pratap battalion which was recently approved by the home ministry?
A. Udaipur
B. Jhalawar
C. Pratapgarh
D. Rajsamand

Ans. C
54. Which is known as the lifeline of a Bikaner city?
A. Kunwar Sen lift Canal
B. Indira Gandhi Canal
C. Rajiv Gandhi Lift Canal
D. None of these

Ans. A
55. What do you mean by valence number?
A. No. of electros in the innermost shell of an atom.
B. No. of electrons an atom can accommodate
C. No. of electron in the outer most shell of an atom.
D. No. of protons an atom can accommodate

Ans. C
56. Consider the following statements:
i. There are three types of combinations, resistances could be arranged.
ii. Series combination is one such type.

Which of the above statements are correct?
A. Only i.
B. Only ii.
C. Both i and ii.
D. Neither i nor ii.

Ans. B
57. The time taken by sunlight to reach the Earth is
A. 8 mins 20 seconds
B. Less than a second
C. 24 hours
D. 365 days

Ans. A
58. Which of the following is the reproducing part of ginger?
A. Leaf
B. Root
C. Stem
D. Seed

Ans. C
59. If $a-b: b-c: c-d=1: 2: 3$, then what is the value of $(a+d): c$ ?
A. $1: 2$
B. $2: 1$
C. $4: 1$
D. $3: 1$

Ans. B
60. By selling 64 apples for Rs. 60 a person gains $25 \%$. In order to have $40 \%$ loss, how many apples shall he sell for RS 36 ?
A. 80
B. 70
C. 60
D. 50

Ans. A
61. In a examination, $54 \%$ of the candidate passed in science and $42 \%$ failed in mathematics. If $32 \%$ failed in both subjects, what percentage passed in both subjects?
A. $56 \%$
B. $48 \%$
C. $32 \%$
D. $44 \%$

Ans. D
62. If an airplane travels 980 km in 35 min, then how much time it will take in travelling 1470 km?
A. $1 \frac{1}{8} \mathrm{hr}$
B. $\frac{1}{2} \mathrm{hr}$
C. $\frac{7}{8} \mathrm{hr}$
D. $1 \frac{1}{6} \mathrm{hr}$

Ans. C
63. आकारांत स्त्रीलिंग एकवचन संज्ञा-शब्दों के अन्त में 'एँ' लगाने से बना बहुवचन शब्द निम्न में से कौन-सा है?
A. तिथियाँ
B. गतियाँ
C. माताएँ
D. जातियाँ

Ans. C
64. हरिश्चंद्र शब्द का निम्न में से कौन सा सही संधि विच्छेद है?
A. हरीश + चंद्र
B. हरि : + चंद्र
C. हरिश् + चन्द्र
D. हरि + शचंद्र

Ans. B
65. "वीर" का स्त्रीलिंग शब्द क्या है?
A. विरावती
B. वीरांगना
C. वारांगना
D. विरांगना

Ans. B
66. स्वर्गगत निम्नलिखित में से कौन सा समास है।
A. कर्म तत्पुरूष
B. करण तत्पुरूष
C. अधिकरण तत्पुरूष
D. इनमें से कोई नहीं

Ans. A
67. Direction: Answer the following questions by selecting the correct/most appropriate options.
While reading for comprehension, we understand that some pairs are examples of homograph. Which one of the following is a homograph?
A. lead [metal]/lead [give direction]
B. lead [give direction]/dead [mortal]
C. mail[post]/male[gender]
D. warm/tepid [being neither too hot nor too cold]

Ans. A
68. Fill in the blank with the appropriate word: She entered the school in the $\qquad$ part of the semester.
A. Latter
B. Late
C. Later
D. Lately

Ans. C
69. Complete the following sentence by choosing the appropriate word from the given options: The municipal corporation was unable to give a valid reason for the $\qquad$ drains.
A. overflowing
B. beautiful
C. clean
D. well-maintained

Ans. A
70. Choose the correct option:
A. Hunger is the good sauce.
B. Hunger is the better sauce.
C. Hunger is the best sauce.
D. Hunger is the more good sauce.

Ans. C

