RVUNL AEN & JEN

Civil Engineering

Mini Mock Challenge
(August 14th - August 15th 2021)

Questions & Answer Key

1. Study the following statements :

   I. For constant w/c ratio, finer sand decreases the workability.

   II. Creep is the deformation of concrete under sustained loading.

   The correct statement(s) is/are

   A. Only I   B. Only II

   C. Both I and II   D. None of these

Ans. C

2. The bar bending schedule is prepared to

   A. calculate quantity of reinforcing bars   B. Calculate quantity of binders

   C. Calculate quantity of stirrup   D. Both A and C

Ans. D

3. Which of the below is the desired policy of the manometric fluid?

   A. High surface tension   B. Hight density

   C. Low density   D. Low surface tension

Ans. B

4. The vertical distance between two consecutive contours is called

   A. Vertical interval   B. Horizontal Equivalent

   C. Contour interval   D. Contour Gradient

Ans. C

5. Which of the following method is used for estimation of depreciation of building?

   A. Constant percentage method   B. Direct comparison method

   C. Logistic curve method   D. Rental method

Ans. A

6. If the temperature of a rod of length L is increased by T°C, whose coefficient of linear expansion is α and Young's modulus is E, then free expansion of the rod due to increase in temperature is given by which of the following expressions?

   A. $\alpha TE^2 L$ B. $\dfrac{\alpha T}{L}$

   C. $\dfrac{\alpha T}{E}$ D. None of the above

Ans. D

7. What does the influence line for Bending Moment indicate?

   A) Bending moment at any section on the structure for a given positions of load.

   B) Bending moment at given section for any positions of a point load.

   A. Only A   B. Only B

   C. Both A and B   D. Neither A nor B

Ans. B

8. Soil at site consists of two layers. The top layer has permeability k units and bottom layer has permeability 5k units. If the thickness of both the layers is equal, then what is the average permeability in the vertical direction?

A. 3k units
B. 5k/3 units
C. 6k/5 units
D. 5k/6 units

Ans. B

9. A river has the dissolved oxygen of 2 mg/l, in this river

A. Fish will not survive

B. Fish habitat can exist

C. Level of dissolved oxygen will not affect fish habitat.

D. Fish habitat can be exist for particular fish

Ans. A

10. As per IS 456 : 2000, both vertical and horizontal spacing of reinforcement should not exceed _____ the thickness of the beam or 450 mm.

A. 2·5 times
B. 3 times
C. 3·5 times
D. All of the above

Ans. B

11. For a standard 45° fillet, the ratio of size of filled to throat thickness is _____.

A. 1:1
B. 1:√2
C. √2:1
D. 2:1

Ans. C

12. Match List 1 (Technical Terms) to the List 2 (Their meaning) and select the answers using the codes given below:

List 1:

(a) Springers

(b) Crown

(c) Soffit

(d) Haunch

List 2:

(i) Inner surface of the arch

(ii) lowest voussoirs of arch

(iii) Lower half portion of arch between the crown and the springer

(iv) Highest point on the arch

A. a – ii, b – i, c – iv, d – iii

B. a – ii, b – iv, c – i, d – iii

C. a – iii, b – iv, c – i, d – ii

D. a – iv, b – i, c – ii, d – iii

Ans. B

13. An axonometric drawing which has all three axes divided by equal angles is:

A. Dimetric   B. Trimetric

C. Orthographic   D. Isometric

Ans. D

14. Water cement ratio is generally expressed in volume of water required per _____.

A. 10 kg   B. 20 kg

C. 30 kg   D. 50 kg

Ans. D

15. Capitalized value of a property is the product of _____

A. annual income and annuity

B. annual income and interest

C. annual income and sinking fund

D. annual income and year's purchase

Ans. D

16. Which of the following condition must be satisfied in the Hardy-Cross analysis of pipe network?

A. Darcy-Weisbach head loss equation.

B. Momentum equation must be satisfied so that the force in each loop is balanced.

C. Continuity principle demands that flow into a network junction is equal to the flow out of it.

D. Both (A) and (C)

Ans. D

17. A plan of an area was prepared on a scale such that a line 20 m long represent 1 cm on plan. If the plan shrunk due to some environmental factors such that the line originally 10 cm is now 9 cm. calculate the shrinkage factor.

A. 0.75   B. 0.8

C. 0.9   D. 0.95

Ans. C

18. Central line method for estimation is suitable for_____.

A. building having large numbers of cross wall

B. building having large numbers of junctions

C. walls having different widths

D. walls having same widths

Ans. D

19. In prismatic compression member having length L, if one end is fixed and at other end translation is allowed but not rotation then the effective length will be:

A. 1.2 L

B. 0.8 L

C. 0.65 L

D. 1.0 L

Ans. A

20. Which of the following is not a necessary condition for external stability of the structure in plane?

A. Reactions should be non-parallel.

B. Reactions should be non-concurrent.

C. Reactions should be non-coplaner.

D. None of above

Ans. C

21. The process by which a mass of saturated soil is caused to suddenly loose its shear strength in response to an applied stress, usually earthquake shaking or other sudden change and to behave as fluid is called

A. piping

B. slide

C. quick sand

D. liquefaction

Ans. D

22. Conversion of particular matter into soluble compounds is known as

A. Acidogenesis

B. Acid Regression

C. Acid fermentation

D. Alkaline Fermentation:

Ans. B

23. The ratio of modulus of elasticity of steel to modulus of elasticity of concrete in RCC is termed as

A. Young's modulus.

B. Bulk modulus.

C. Modular ratio.

D. Mix ratio.

Ans. C

24. If diameter of a rivet hole is 25 mm. then according to the Unwin's formula, thickness of plate will be-

A. 13.68 mm

B. 24.65 mm

C. 30.45 mm

D. 17.30 mm

Ans. D

25. How does the seasoning of timber help?

A. It increases the weight of timber

B. It improves the strength properties of timber

A. Only A

B. Only B

C. Both A and B

D. None of these

Ans. B

26. If the velocity potential function $\phi = 5(x^2 - y^2)$, the velocity components at the points (4,5) will be

A. u = -35, v = 40

B. u = -40, v = 55

C. u = -40, v = 50

D. u = 40, v = -50

Ans. C

27. The staff reading taken at a distance of 1050m from the instrument is 1.765m. What will be the correction in the reading due to atmospheric refraction?

A. 0.012m, positive

B. 0.012m, negative

C. 0.010m, positive

D. 0.010m, negative

Ans. A

28. Property of a material which allows to deform continuously without much increase of stress is called:

A. Tenacity

B. Plasticity

C. Ductility

D. Malleability

Ans. B

29. The maximum unit pressure that a soil can withstand without rupture in shear or with excessive settlement of structure is called

A. ultimate bearing capacity

B. safe bearing capacity

C. allowable bearing pressure

D. none of the above

Ans. C

30. Which of the following is the correct reason for soaking the brick in water before its use?

A. For pre venting adsorption of moisture from mortar by bricks

B. For reducing air void

C. For reducing efflorescence

D. For cleaning

Ans. A

31. In a certain code language, '**MACHINE**' is written as '**N5XS3M4**'. How will '**PREDICT**' be written as in that language?

A. JI4V3YG

B. KI2W3YF

C. KI4W3XG

D. K34W3XH

Ans. C

32. In a class of 52 children, Bilal's rank is 11 th from the bottom. Salman is 9 ranks above Bilal. What is Salman's rank from the top ?

A. 37th

B. 33rd

C. 38th

D. 35th

Ans. B

33. 'Star' is related to 'Galaxy' in the same way as 'Flower' is related to '_____'

   A. Jasmine   B. Blossom

   C. Bouquet   D. Petal

Ans. C

34. Two statements are followed by three conclusions I, II and III. Assuming these statements to be true, even if they seem to be at variance from commonly known facts, then decide which of the given conclusions logically follows from the given statements.

   Statement :

   Some plants are trees.

   All trees are shrubs.

   I. Some shrubs are plants.

   II. All shrubs are plants.

   III. No shrub are plant.

   A. Only conclusions I and III follow.

   B. Only conclusion III follows.

   C. Only conclusion I follows.

   D. Only conclusions II and III follow

Ans. C

35. The Finance Commission is constituted by the President at the expiration of every _____ year.

   A. tenth   B. seventh

   C. sixth   D. fifth

Ans. D

36. India shares its least international boundary with which country?

   A. Pakistan   B. China

   C. Afghanistan   D. Nepal

Ans. C

37. Fatwa-i-Alamgiri, a digest of Muslim laws, was written during the period of which of the following kings?

   A. Nadir Shah   B. Aurangzeb

   C. Tipu Sultan   D. Feroz Shah Tughlaq

Ans. B

38. Which of the following is working capital in the farming sector?

   A. tractor   B. money

   C. threshing machine   D. land

Ans. B

39. Rathores belong to which clan?

   A. Suryavanshi   B. Chandravanshi

   C. Agni kula   D. None

Ans. A

40. Which canal is known as the lifeline of Jodhpur City?

   A. Karni Singh lift Canal

   B. Rajiv Gandhi Lift Canal

   C. Jai Narayan Vyas lift Canal

   D. Guru Jhambeshver Lift Canal

Ans. B

41. Consider the following statement.

   1) Udaipur and Banswara are the two districts having the highest percentage of Scheduled Tribe.

   2) Bikaner and Nagaur are the two districts having the lowest percentage of Schedule Tribe.

   3) Dungarpur district has the highest Schedule Tribe sex ratio.

   Which of the following statement/s is/are correct?

   A. 1 and 2   B. 2 and 3

   C. 1 and 3   D. All of the above

Ans. D

42. Which of the following restrictions were added in Weddings of Rajputana by the 'Desh Hiteshi Sabha' of Udaipur.

   1: To limited the expenses and extravagance in the weddings.

   2: To make a law against Polygamy.

   A. Statement 1   B. Statement 2

   C. Both Statement 1 & 2   D. Neither Statement 1 nor 2

Ans. C

43. Consider the following statements.

   (i) Mirza Raja Jaysingh was the longest reign ruler of Jaipur.

   (ii) Jai Singh was given the title of "Mirza Raja" by Shah Jahan.

   (iii) Famous Sanskrit poet Biharimal resided in Jai Singh's court.

   Which of the above statements are true?

   A. (i)   B. (ii)

   C. (i), (ii)   D. (i), (ii), (iii)

Ans. C

44. Which statement/statements are correct?

A. In Rajasthan, we get Tungeston from Wolframite and Scheelite ores.

B. We use Tungeston in electricity Bulb, special steel for defence purpose and high-speed cutting tools.

C. Production area of tungsten in Rajasthan: Jaipur, Bikaner, Hanumangarh.

D. A) and B)

Ans. D

45. Which statement/statements are correct about Aridisols?

A. Aridisols are mineral soils mostly found in Dry climatic.

B. Aridisols are found in association with soils of order Entisols.

C. The major portion of Aridisols in Rajasthan is covered by the suborder Orthids.

D. All of above

Ans. D

46. Match the Following.

List – II

1) Haridev Joshi

2) Jodhpur Sambhag

3) Bharatpur Sambhag

4) Mohanlal Sukhadia

List – II

A) Ended the System of Sambhag was Re-started.

B) The System of Sambhag was Re-started.

C) Consists of 6 districts.

D) Smallest Sambhag of Rajasthan.

A. 1-A; 2-B; 3-C; 4-D   B. 1-D; 2-C; 3-B; 4-A

C. 1-D; 2-B; 3-C; 4-A   D. 1-B; 2-C; 3-D; 4-A

Ans. D

47. Consider the following statements

1) Article 324 - Superintendence, direction and control of elections to be vested in an Election Commission.

2) Ashwini Bhagat is the Chief Electoral Officer of Rajasthan.

3) The State Election Commission, Rajasthan was incorporated in the month of July, 1994 under Article 243K of the Constitution of India.

Which of the following statements are correct?

A. 1 and 2   B. 2 and 3

C. 1 and 3   D. All of the above

Ans. D

48. Match the following.

    Types of Forts

    1) Dhaanvan Fort

    2) Paarikh Fort

    3) Eran (Anvil) Fort

    4) Giri (Hilly/Mountain) Fort

    Features

    A) A fort situated on a Mountain/Hill.

    B) A fort which is protected by Trench, Thorns and Rocks.

    C) A fort surrounded by a deep moat/trench.

    D) A fort largely surrounded by desert area.

    A. 1-A; 2-B; 3-C; 4-D   B. 1-D; 2-C; 3-B; 4-A

    C. 1-D; 2-B; 3-C; 4-A   D. 1-B; 2-C; 3-D; 4-A

Ans. B

49. When did the Rajasthan state government transfer the district level activities of departments of primary education, agriculture, medical checkup and health, women and children development and social justice to Panchayati Raj Institutions?

    A. 2nd October 2010   B. 2nd October 2011

    C. 2nd October 2012   D. 2nd October 2013

Ans. A

50. Who among the following has been awarded by Shaurya Chakra of 2018 from Rajasthan?

    A. Vikas Jakhar   B. Bahadur Singh

    C. Ranjit Singh   D. Jai Ram Jakhar

Ans. A

51. Who established the Sisodia Clan in Mewar?

    A. Rana Hammir   B. Rana Ratan Singh

    C. Rana Sanga   D. Rana Pratap

Ans. A

52. Who constructed Anasagar Lake?

    A. Arnoraj   B. Vasudev

    C. Ajayraj   D. Chandraraj

Ans. A

53. Who was the court scholar of Vigraharaj IV?

    A. Somdev   B. Ramdev

    C. Harisen   D. Dharavarsha

Ans. A

54. Generally Coral reefs are found at:

    A. above 18^0C in temperate climatic zones

    B. In coastal areas between Cancer and Capricorn

    C. on both eastern and western sides of the continents and islands

    D. On the cold coastal shores

Ans. B

55. Which of the following vitamins is generally excreted by human in urine?

    A. Vitamin B   B. Vitamin C

    C. Vitamin D   D. Vitamin E

Ans. B

56. Sulphur dioxide bleaches colouring matter by :

    A. Reduction   B. Dehydration

    C. Decomposition   D. Oxidation

Ans. A

57. Instrument used to study the behavior of a vibrating string is :

    A. Baromter   B. Hydrometer

    C. Hygrometer   D. Sonometer

Ans. D

58. The name of which disease among the following means 'evil influence of the stars'?

    A. Typhoid   B. Cholera

    C. Influenza   D. Plague

Ans. C

59. The average of 16 numbers is 48. The average of the first 7 numbers is 45 and the average of the next 6 numbers is 52. If the 14th number is 11 less than the 15th number and is 5 more than the 16th number, the average of the 15th and 16th number is:

    A. 47.5   B. 48.5

    C. 49   D. 48

Ans. D

60. A sum of Rs. 10,000 is invested for 17 months at 8% per annum compounded half yearly. What is the percentage gain at the end of 17 month, nearest to one decimal place?

    A. 12.2%   B. 12.0%

    C. 11.8%   D. 12.4%

Ans. C

61. A cuboid of edges 32 cm, 4 cm and 4 cm is cut to form cubes of edge 4 cm each. What is the sum of total surface areas of all cubes formed?

    A. 768 cm^2 B. 640 cm^2

    C. 544 cm^2 D. 576 cm^2

Ans. A

62. The value of $\dfrac{0.325 \times 0.325 + 0.175 \times 0.175 - 25 \times 0.00455}{5 \times 0.0065 \times 3.25 - 7 \times 0.175 \times 0.025}$ lies between:

   A. 0.35 and 0.45   B. 0.15 and 0.25

   C. 0.25 and 0.35   D. 0.05 and 0.15

Ans. C

63. सही विकल्प को चुनकर निम्नलिखित वाक्य के रिक्त स्थान की पूर्ति कीजिए :

   नाच न आवे _____ टेढ़ा

   A. उँगली   B. पैर

   C. आँगन   D. घड़ा

Ans. C

64. **निर्देशः** प्रत्येक प्रश्न में एक वाक्य दिया हुआ है। कुछ वाक्य बिल्कुल शुद्ध हैं पर कुछ में गलती हैं

   वाक्य के जिस भाग में गलती हो, (A), (B) या (C) वही भाग उत्तर होगा

   यदि कोई गलती न हो, तो आपका उत्तर (D) होगा।

   (A) रामचरित मानस का प्रणयन सामन्ती काल में /(B) अवश्य हुआ था किन्तु वह युगीन धारा से/(C) सर्वदा असम्पृक्त रहा । /(D) कोई गलती नहीं ।

   A. A

   B. B

   C. C

   D. कोई गलती नहीं

Ans. C

65. निर्देश: नीचे दिए गए प्रत्येक प्रश्न में शब्दों का एक समूह मोटे अक्षरों मी लिखा गया है दिए गए विकल्पों में से उस विकल्प का चयन कीजिए जो की वाक्य में मोटे अक्षरों की जगह ले ले । |||End|||

   बरसात में मच्छर नाक में दम कर देते है।

   A. सोने नही   B. आवाज करना

   C. बहुत परेशान कर   D. प्रदूषण फैलना

Ans. C

66. 'ड' और 'ढ़' वर्णों को क्या कहा जाता है?

   A. संघर्षी व्यंजन   B. उत्क्षिप्त व्यंजन

   C. अन्त:स्थ व्यंजन   D. द्वित्व व्यंजन

Ans. B

67. **Direction**: Read the sentence to find out whether there is any error in it. The error, if any, will be in one part of the sentence. If the given sentence is correct as it is, mark the answer as No error. Ignore the errors of punctuation if any. |||End|||

More often than not, (A)/ selecting a candidate (B)/ results into a power tussle between many parties (C)/ that believe that their respective candidate is the best. (D)/ No error

A. A   B. B

C. C   D. D

E. No error

Ans. C

68. **Direction:** The following question carries a sentence with two blanks. Choose the most suitable pair of words from the given options that would make the sentence meaningful and complete.

After a natural spring was discovered in the parched lands of the region, his old abandoned house was _____ into a profitable business venture with a state-of-the-art pump that _____ water.

A. turned, expiates   B. transformed, emanates

C. changed, exhausts   D. configured, traverses

E. None of these

Ans. B

69. Complete the sentence by putting an appropriate determiner:

You should always carry…………………………umbrella with you.

A. a   B. an

C. any   D. a few.

Ans. B

70. In the following question, out of the four alternatives, select the word similar in meaning to the given word.

Draconian

A. Contrite   B. Pliable

C. Stringent   D. Ductile

E. None of these

Ans. C

***