gradeup

RVUNL AEN & JEN
Mechanical Engineering

Mock Test-2
(July 28th - July 29th 2021)

Questions & Answer Key
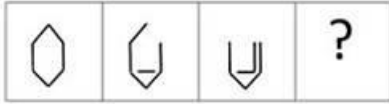
1. In the following question, select the related word from the given alternatives.

    Farmer : Field : : Painter : ?

    A. Gallery   B. Stage

    C. Theatre   D. Shop

Ans. A

2. In the following pattern of figures, find the next number?

    A.   B.

    C.   D.

Ans. A

3. Shalini walked 15m towards south, took a right turn and walked 3m. She took a right turn again and walked 15m before stopping. Which direction did Shalini face after stopping?

    A. West   B. South

    C. East   D. North

    E. cannot be determined

Ans. D

4. 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

5. The Indian Parliament was attacked by terrorists in which of the following year?

    A. 2000   B. 2001

    C. 2002   D. 2003

Ans. B

6. What is the modern name of Drishadvati river (rig Vedic)?

    A. Saraswati   B. Krumu

    C. Ghagghar   D. Gomal

Ans. C

7.   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

8.   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

9.   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

10. 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

11. Rajasthan state's first lady patrolling team deployed in which among the following city?

   A. Jaipur   B. Ajmer

   C. Kota   D. Udaipur

Ans. D

12. 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

13. 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

14. 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

15. Tilwara, a Mesolithic site, is situated on the bank of which river?

A. Saraswati	B. Ghaghhar
C. Luni	D. Bhogavo

Ans. C

16. 'Battle of Sarangpur' was fought in which year?

A. 1438	B. 1436
C. 1439	D. 1437

Ans. D

17. Who established the city "Udaipur"?

A. Udai Singh	B. Rana Vikramaditya
C. Rana Pratap	D. None of these

Ans. A

18. 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

19. 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

20. 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

21. Loamy soil is Important for which crops?

A. Cotton and cash crops   B. Tobacco

C. Bajra   D. None of above

Ans. C

22. 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

23. 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

24. 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

25. 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

26. 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

27. 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

28. Which of the following is the reproducing part of ginger?

A. Leaf   B. Root

C. Stem   D. Seed

Ans. C

29. 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

30. 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

31. 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

32. If an airplane travels 980 km in 35 min, then how much time it will take in travelling 1470 km?

A. $1\frac{1}{8}$ hr   B. $\frac{1}{2}$ hr

C. $\frac{7}{8}$ hr   D. $1\frac{1}{6}$ hr

Ans. C

33. 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

34. 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

35. **"वीर"** का स्त्रीलिंग शब्द क्या है?

    A. विरावती   B. वीरांगना

    C. वारांगना   D. विरांगना

Ans. B

36. स्वर्गगत निम्नलिखित में से कौन सा समास है।

    A. कर्म तत्पुरूष   B. करण तत्पुरूष

    C. अधिकरण तत्पुरूष   D. इनमें से कोई नहीं

Ans. A

37. **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

38. Fill in the blank with the appropriate word:

    She entered the school in the _____ part of the semester.

    A. Latter   B. Late

    C. Later   D. Lately

Ans. C

39. 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 _____ drains.

    A. overflowing   B. beautiful

    C. clean   D. well-maintained

Ans. A

40. 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

41. The difference between tensions on the tight and slack sides of a belt drive is 2000 N. If the belt speed is 20 m/s, the transmitted power in kW is

    A. 40 kW   B. 20 kW

    C. 45 kW   D. 400kW

Ans. A

42. Wet Bulb Depression is equal to _____.(DBT means dry bulb temperature, WBT means wet bulb temperature and DPT means dew point temperature)

    A. DBT-WBT   B. WBT-DPT

    C. DBT-DPT   D. None of These

Ans. A

43. Holes of diameter $25.0^{+0.040}_{+0.020}\ mm$ are assembled interchangeably with the pins of diameter $25.0^{+0.005}_{+0.008}\ mm$. The minimum clearance in the assembly will be

    A. 0.048 mm   B. 0.012 mm

    C. 0.005 mm   D. 0.008 mm

Ans. B

44. Which of the following statements is correct?

    1) All the reversible cycles operating under same maximum and minimum temperature and working substance have same efficiency.

    2) Entropy of an internally irreversible and adiabatic process is always positive.

    3) An internally reversible adiabatic process is called isentropic process.

    4) For an internally irreversible process change in entropy can be positive, negative or zero.

    A. 1 and 2 are correct   B. 1, 2, 3 are correct

    C. 3 and 4 are correct   D. 1,2,3,4 are correct

Ans. D

45. Which of the following statements are correct with respect to expansion devices.

    (a) It performs the thermodynamic function of expanding the liquid refrigerant from condenser pressure to evaporator pressure.

    (b) Controls the supply of refrigerant to evaporator.

    (c) It is a restriction offering resistance.

    (d) All of above

A. a, b   B. a, c

C. b, c   D. d

Ans. D

46. Consider a beam with circular cross-section of diameter d. The ratio of the second moment of area about the neutral axis to the section modulus of the area is.

A. d/2   B. пd/2

C. d   D. пd

Ans. A

47. Tempering of hardened steel is necessary to improve

A. corrosion resistance   B. ductility

C. texture   D. hardness

Ans. B

48. The distance from the centre of arc to the tip of electrode is called what?

A. Arc distance   B. Arc length

C. Arc crater   D. Arc depth

Ans. B

49. The purpose of surge tank in a pipe line is to _____.

A. Smoothen the flow of water

B. Compensate friction losses in pipe

C. Prevent occurrence of hydraulic jump

D. Relieve pressure due to water hammer

Ans. D

50. A solid circular shaft of diameter 60 mm transmits a torque of 1500 N-m. The value of maximum shear stress developed is _____.

A. 40.37MPa   B. 35.37MPa

C. 30.25 MPa   D. 50.35MPa

Ans. B

51. The rated life of a ball bearing varies_____.

A. Directly as load

B. Inversely as square of load

C. Inversely as cube of load

D. Inversely as fourth power of load.

Ans. C

52. The stress state at a point in a material under plane stress condition is equi-biaxial tension with a magnitude of 10 MPa. If one unit on the σ - τ plane is 1 MPa, the Mohr's circle representation of the state-of-stress is given by

A. a point on the τ axis at a distance of 10 units from the origin

B. a point on the σ axis at a distance of 10 units from the origin

C. a circle with a radius equal to principal stress and its centre at the origin of the σ - τ plane

D. a circle with a radius of 10 units on the σ - τ plane

Ans. B

53. What is the condition involved in Grashof's law?

(where s and l are the links of shortest and longest links of the 4 bar chain respectively and p and q are the lengths of the other links)

A. s+l≥p+q   B. s-l ≥ p-q

C. s+l≤p+q   D. s-l ≤ p-q

Ans. C

54. Which one of the following is the fire-tube boiler?

A. Babcock and Wilcox boiler   B. Locomotive boiler

C. Stiling boiler   D. Benson boiler

Ans. B

55. A particle is moving with a constant angular velocity about an exterior axis. Its linear velocity will depend upon -

A. perpendicular distance of the particle form the axis

B. the mass of particle

C. angular acceleration of the particle

D. the linear acceleration of particle

Ans. A

56. For the water is flowing through a 20 cm diameter pipe with friction factor, f=0.04. The flow will be

A. Viscous   B. Non viscous

C. Both viscous and non-viscous   D. None of these

Ans. A

57. Critical point of water is

A. 273 K   B. 374 K

C. 374.2°C   D. 374 °F

Ans. C

58. The instantaneous centre of rotation of a sliding block on a horizontal surface is located at

A. The point of contact

B. centre of gravity of sliding block

C. Any point along the line of sliding

D. None of the above

Ans. D

59. Water at 90m head of water flows through a cast iron pipe of diameter 1.5m. The thickness of the pipe required for this if it can withstand a maximum tensile stress of 18MPa would be nearly

A. 35mm   B. 25mm

C. 37mm   D. 28mm

Ans. C

60. Power applied to a particle varies with time as P = $[3t^2 - 2t + 1]$ watts. Where t is time in seconds. Then the change in kinetic energy of particle between time t = 2s to t = 4s is –

A. 46 J   B. 52 J

C. 92 J   D. 104 J

Ans. A

61. A gas turbine plant working on the joule cycle produces 5000 kW of net power. If it's work ratio is 50% what is the power consumed by the, compressor in (kW) _____.

A. 5000   B. 10000

C. 2500   D. 7500

Ans. A

62. The number of cars arriving at a car service centre is 5 cars per hour and single channel service provider takes 10 minutes/car, then the utilization of system in percentage will be

A. 0.166   B. 16.66

C. 0.833   D. 83.33

Ans. D

63. Which one of the following gaseous fuels does not have different higher and lower calorific values?

A. Methane   B. Ethane

C. Carbon monoxide   D. Hydrogen

Ans. C

64. Which one of the following is incorrect about a material with good machinability

A. Require little power to cut

B. Can be cut easily

C. Surface finish obtained is poor

D. Do not cause much tool wear

Ans. C

65. One stoke is equal to:

A. 1 cm^2/sec   B. 1 m^2/sec

C. 1 mm^2/sec   D. 10 m^2/sec

Ans. A

66. The time constant of a thermocouple is _____.

    A. the time taken to attain the final temperature to be measured

    B. the time taken to attain 50% of the value of initial temperature difference

    C. the time taken to attain 63.2% of the value of initial temperature difference

    D. determined by the time taken to reach 100°C from 0°C

Ans. C

67. Isomorphous materials are defined as

    A. material which are soluble in the liquid

    B. material which are soluble in solid

    C. material which are soluble in both solid and liquid

    D. none of these

Ans. C

68. The number of teeth per unit length of the pitch circle diameter is called

    _____

    A. diametral pitch   B. module

    C. clearance   D. gear ratio

Ans. A

69. The velocity v of a particle is given in terms of time t by the equation

    v = at + (b/t) + c

    The dimensions of a, b & c are -

    A. L^2, T, LT^2 B. LT^2, LT, L

    C. LT^{-2}, L, LT^{-1} D. L, LT, T^2

Ans. C

70. The universal gas constant of a gas is the product of molecular weight of the gas and ___.

    A. Gas constant

    B. Specific heat at constant pressure

    C. Specific heat at constant volume

    D. None of these

Ans. A

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