

JKSSB JE

**Previous Year Paper
(Technical Officer)
22 Jul, 2025**

Adda247

Test Prime

ALL EXAMS, ONE SUBSCRIPTION



1,00,000+
Mock Tests



**Personalised
Report Card**



**Unlimited
Re-Attempt**



600+
Exam Covered



25,000+ Previous
Year Papers



500%
Refund



ATTEMPT FREE MOCK NOW

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

Booklet Serial No.

106353

Test Booklet Series

TECHNICAL OFFICER
OMR Examination - 2025

A

Time Allowed : 120 Minutes

Maximum Marks : 120

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. Please note that it is the candidate's responsibility to encode and fill in the Roll Number, Booklet Serial No. and Test Booklet Series Code A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer /Response Sheet. Any omission/discrepancy will render the Response Sheet liable for rejection.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside.
DO NOT write anything else on the Test Booklet.
4. This Test booklet contains 120 items (questions). Each item comprises of four responses (answers). You will select the response which you want to mark on the Answer Sheet/Response Sheet. In case you feel that there is more than one correct response, mark the response which you consider the appropriate. In any case, choose **ONLY ONE** response for each item.
5. You have to mark all your responses **ONLY** on the separate Answer /Response Sheet provided. See directions in the Response Sheet.
6. All items carry equal marks.
7. After you have completed filling in all your responses on the Response Sheet and the examination has concluded, you should hand over to the Invigilator **only the Answer /Response Sheet**. You are permitted to take away with you the Test Booklet and **Candidate's Copy of the Response Sheet**.
8. Sheets for rough work are appended in the Test Booklet at the end.
9. While writing Centre Code and Roll No. on the top of the Answer Sheet/Response Sheet in appropriate boxes use **"ONLY BLUE/BLACK BALL POINT PEN"**.
10. **Penalty for wrong answers:**

THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY THE CANDIDATE IN THE WRITTEN TEST (OBJECTIVE TYPE QUESTIONS PAPERS).

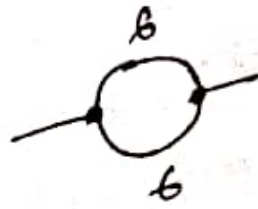
- (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, ($\frac{1}{4}$) of the marks assigned to that question will be deducted as penalty.
- (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above for that question.
- (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be no penalty for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

(Set - A)

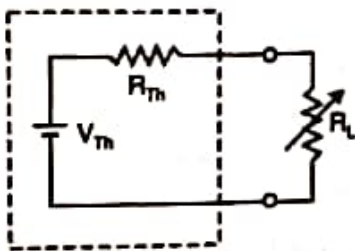
1. A wire has a resistance of $12\ \Omega$. It is bent in the form of a circle. The effective resistance between the two points on any diameter of the circle is

- A) $6\ \Omega$
B) $12\ \Omega$
C) $24\ \Omega$
D) $3\ \Omega$ ✓



$$\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$$

2. What percentage of the maximum Power is delivered to R_L in the given figure, when $R_L = 2R_{th}$?



- A) 75 %
B) 90 %
C) 88.89 % ✓
D) None of the above

$$\frac{3}{4}$$

3. The electric field intensity on the surface of a charged conductor is

- A) Zero
B) Directed normally to the surface ✓
C) Directed tangentially to the surface
D) Directed at 45° to the surface



4. 64 drops of radius r combine to form a bigger drop of radius R . The ratio of the capacitances of the bigger to the smaller drop is

- A) 1:4
B) 4:1 ✓
C) 1:2
D) 2:1

Big to Small
 $4R$ $64r$

Capacitance $\propto r$

$$\frac{16 \times 16}{4^2} = 16$$

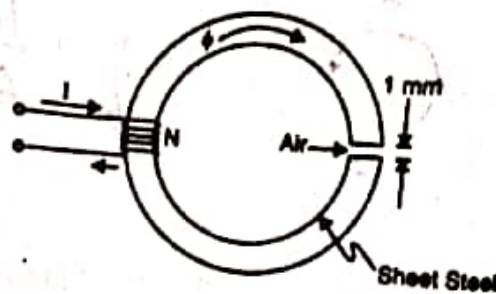
$$\frac{4 \times 4 \times 4}{64} = 1$$

[P.T.O.]

(Sol-A)

(3)

5. In the figure, the cross-section of the core is circular and has a radius of 1.25 mm. The mean length of the core is 30 cm. If the flux in the core is 0.6×10^{-5} Wb, then H in air-gap is.



- A) 2.5×10^6 AT/m
B) 1.5×10^7 AT/m
C) 8.2×10^4 AT/m
D) 9.71×10^5 AT/m ✓
6. A solenoid consisting of 2000 turns is uniformly wound over a length of 0.3 meters and has a cross-sectional area of $1.2 \times 10^{-3} \text{ m}^2$. A secondary coil with 300 turns is closely wound around the central region of the solenoid. If the current in the solenoid, initially 2 A, is reversed in 0.25 seconds, what is the magnitude of the e.m.f. induced in the secondary coil?
A) 0.048 V ✓
B) 1.2 V
C) 1.9 V
D) 0.023 V
7. If the Fourier Transform of $x[n]$ is $X(e^j)$, then what will be the Fourier Transform of $x^*[-n]$?
A) $X^*(e^{-j})$
B) $X^*(e^j)$ ✓
C) $X^*(-e^{-j})$
D) $X^*(-e^j)$

8. For a periodic signal $v(t) = 30 \sin 100t + 10 \cos 300t + 6 \sin(500t + \pi/4)$, the fundamental frequency in rad/s is _____

- A) 300
- B) 450
- C) 100 ✓
- D) 720

9. What type of current transformer (CT) connection is used for the protection of a star-delta connected three-phase power transformer?

- A) Delta-Star ✓
- B) Star-Star
- C) Star-Delta
- D) Delta-Delta

10. On which of the following factors does hysteresis loss depend?

- i. Flux density ✓
- ii. Frequency ✓
- iii. Thickness of laminations
- iv. Time

Select the correct answer from the options given below.

- A) ii and iii
- B) i and iv
- C) iii and iv
- D) i and ii ✓

11. A DC series motor is driving a load for which the torque varies proportionally to the square of the speed. If the motor draws a line current of 10 A at 200 rpm, what will be the line current when the speed increases to 400 rpm?

- A) 15.5 A
- B) 20 A ✓
- C) 10.14 A
- D) 14.14 A

$$T \propto v^2$$

$$\frac{I_1}{I_2} = \frac{(400)^2}{(200)^2}$$

$$I_1 = 10 \text{ A @ } 200 \text{ rpm}$$

$$I_2 = ? \text{ @ } 400 \text{ rpm}$$

$$I_2 = 20$$

12. A synchronous generator has a direct-axis reactance $X_d = 0.4$ per unit, based on its nameplate ratings of 10 kV and 75 MVA. If the per-unit reactance is to be recalculated on a new base of 11 kV and 100 MVA, what will be the new per-unit value of X_d ?

- A) 0.54
- B) 0.28
- C) 0.44 ✓
- D) 0.38

13. A 400 V, 15 kW, 4-pole, 50 Hz Y-connected induction motor has a full-load slip of 4%. The output torque of the machine at full load is:

- A) 99.47 N
- B) 98.53 N
- C) 99.47 Nm
- D) 98.53 Nm

14. Consider the following statements regarding HVDC system:

- i. The modern HVDC systems use 12-pulse converters
- ii. DC systems never use ground or sea return
- iii. Most of the present-day DC schemes are two-terminal links

Which of the statements given above is/are correct?

- A) i and iii only
- B) i only
- C) i, ii and iii
- D) ii and iii only

15. A generating station has a maximum demand of 30 MW, a load factor of 60% and a plant capacity factor of 50%. The reserve capacity of the plant is.

- A) 5 MW
- B) 4 MW
- C) 3 MW
- D) 6 MW

$$30 \text{ MW} \times 0.6 \times 0.5 = 9 \text{ MW}$$

16. If x and y are Boolean variables, which one of the following is the equivalent of $x \oplus y \oplus xy$?

- A) $x+y'$
- B) $x+y$
- C) 1
- D) 0

17. Which of the following statements is NOT correct?
- MOS devices require fewer manufacturing cycles
 - MOS devices are the fastest devices
 - MOS gates dissipate less power per gate
 - MOS gates require less space on the silicon wafer

18. Match the two lists and choose the correct answer from the codes given below

List -I (Types of Device)

List -II (Characteristics/Application)

(w) MOSFET

(i) Turn off by negative gate

(x) GTO

(ii) Bidirectional switching

(y) UJT

(iii) High-speed switching

(z) TRIAC

(iv) Triggering circuit

Choose the correct option:

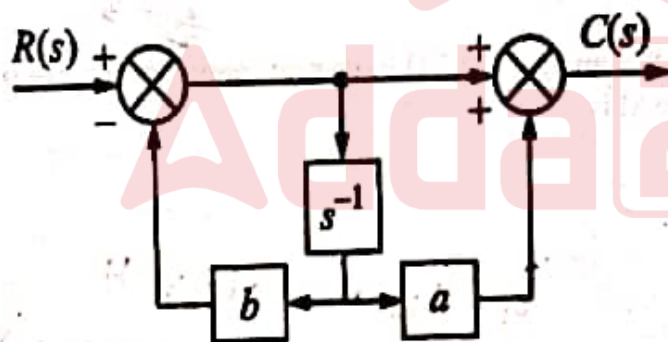
A) (w)-(iii), (x)-(i), (y)-(iv), (z)-(ii)

B) (w)-(ii), (x)-(iii), (y)-(iv), (z)-(i)

C) (w)-(ii), (x)-(iv), (y)-(i), (z)-(iii)

D) (w)-(iii), (x)-(i), (y)-(ii), (z)-(iv)

19. The block diagram for a particular control system is shown in the figure. What is the transfer function $C(s)/R(s)$ for this system?



A) $\frac{s+a}{s-b}$

B) $\frac{s-b}{s+b}$

C) $\frac{s+a}{s+b}$

D) $\frac{s+b}{s+a}$

(Set -A)

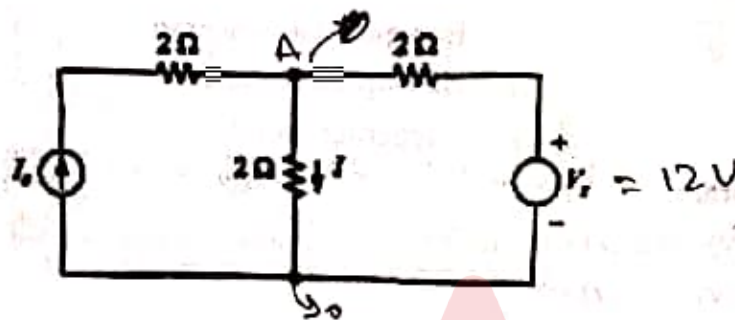
(7)

[P.T.O.]

20. A negative feedback closed-loop system is supplied with an input of 5 V. The system has a forward gain of 1 and a feedback gain of 1. What is the output voltage?

A) 2.5 V ✓
B) 1.0 V
C) 1.5 V
D) 3.0 V

21. In the circuit shown below, when $V_s = 0V$, $I = 3A$. What will be the value of I when $V_s = 12V$?



A) 7A
B) 3A
C) 9A
D) 6A ✓

$$\frac{V}{R} = I$$

is it

$$\frac{V_A}{2} - \frac{V_A}{2} = \frac{12}{2}$$

$$V_A = 6$$

$$V = 2R$$

$$\frac{6}{2} = 3$$

22. Two coupled coils of $L_1 = 0.8H$ and $L_2 = 0.2H$ have a coupling coefficient of $k=0.9$. The mutual inductance M is

A) 0.144 H
B) 0.36 H ✓
C) 0.23 H
D) 0.43 H

$$1.000$$

$$L_1 + L_2 - L_1 L_2 \times H$$

$$0.8 + 0.2 - 0.9 \times 0.8 \times 0.2$$

23. A signal $x(t)$ has a fourier transform $X(j\omega)$. If $x(t)$ is a real and odd function of t , then $X(j\omega)$ is

A) A real and even function of ω
B) An imaginary and even function of ω
C) An imaginary and odd function of ω
D) A real and odd function of ω

$$9 \times 0.16 = 1.44$$

$$1.44$$

$$1.000$$

$$0.036$$

(Set - A)

$$\begin{array}{r} 1.000 \\ .144 \\ \hline .036 \end{array} \quad (8)$$

24. The output of a linear system for a step input is $t^2 e^{2t}$. The transfer function of the system is:

A) $\frac{2s}{(s+2)^3}$

B) $\frac{s}{(s+1)^3}$

C) $\frac{3s}{(s+2)^2}$

D) $\frac{s}{s^2(s+1)^3}$

25. An intrinsic semiconductor has an intrinsic electron concentration of 10^{16} m^{-3} . It is doped with donor atoms to a concentration of 10^{22} m^{-3} , with all donors fully ionised. What is the resulting hole concentration in the semiconductor?

A) 10^{22} m^{-3} ✗

B) 10^{16} m^{-3}

C) 10^{11} m^{-3}

D) 10^{10} m^{-3} ✗

$$10^{22} - 10^{16} = 10^{16} (10^6 - 1) \approx 10^{16} \times 10^6 = 10^{22} \text{ m}^{-3}$$

26. Which of the following features are offered by a bipolar junction transistor amplifier in Darlington connection?

- High voltage gain
- High input impedance
- High current gain

donor atom

⇒ Al^{3+} ✗

Select the correct answer using the code given below.

A) i and ii only

B) ii and iii only

C) i and iii only

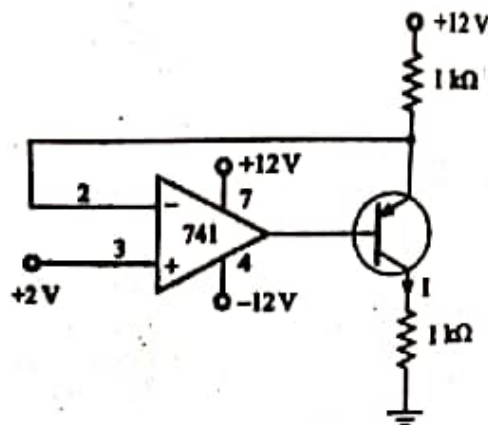
D) i, ii and iii

ⓕ

$$10^{22} + 10^{16}$$

$$10^{16} (10^6 + 1)$$

27. An op-amp circuit is shown in the given figure. The current I is _____



- A) 10 mA
B) 0 mA
C) 6 mA
D) 12 mA
28. Consider the following statements:
i. A Hartley oscillator circuit uses a tapped inductor for inductive feedback
ii. An oscillator circuit can be operated in class A condition for better waveshape
iii. Frequency stabilisation is obtained by the use of automatic biasing
Which of the statements given above are correct?
A) ii and iii
B) i and iii
C) i and ii
D) i, ii and iii
29. A simplified form of the Boolean expression $Y = (A'BC + D)(A'D + B'C')$ is
A) $AD + BC'D$
B) $(A' + D)(B'C + D')$
C) $AD' + BCD'$
D) $A'D + B'C'D$
30. A 12-bit A/D converter has a range of 0-10 V. What is the approximate resolution of the converter?
A) 0.488 mV
B) 2.44 mV
C) 4.88 mV
D) 0.244 mV

(Set - A)

(10)

$$\begin{aligned} &A'BCA'D \\ &+ A'BB'CC' \\ &+ A'DD + B'C'D \end{aligned}$$

31. Which type of control pins are used in a microprocessor to regulate access to the bus and prevent multiple devices from using it simultaneously?
- Bus Request (BR) and Bus Grant (BG) pins
 - Interrupt Request (IRQ) and Interrupt Acknowledge (INTA) pins
 - Read (RD) and Write (WR) pins
 - Clock (CLK) and Reset (RST) pins
32. The READY signal in 8085 is useful when the CPU communicates with
- A fast peripheral device
 - A DMA controller chip
 - A slow peripheral device
 - A PPI chip
33. For a second-order system, the natural frequency of oscillation is 10 rad/s, and the damping ratio is 0.1. What is the 2% settling time?
- 2 s
 - 2.5 s
 - 3.2 s
 - 4 s
34. Consider the following statements concerning a feedback control system:
- Accuracy cannot be obtained by adjusting the loop gain
 - Feedback decreases overall gain
 - Introduction of noise due to a sensor increases the overall gain
 - Introduction of feedback may lead to the possibility of instability in a closed-loop system
- Which of the statements given above is/are correct?
- i and iii
 - ii and iv
 - i and iv
 - ii and iii

35. The number of AM broadcast stations that can be accommodated in a 100 kHz bandwidth for the highest modulating frequency of 5 kHz will be

- A) 10
- B) 20
- C) 100
- D) 5

check

$$\frac{100}{5} = 20$$

36. In which of the following modulations can the signal-to-noise ratio be improved by increasing bandwidth?

- A) AM
- B) FM
- C) SSB
- D) DSB-SC

37. During the frequency conversion (heterodyning) in a superheterodyne receiver, the original modulation on the signal:

- A) Is completely removed
- B) Is reduced in amplitude
- C) Is shifted to a new frequency but remains unchanged
- D) Is distorted and lost

38. In delta modulation, slope overload occurs when the modulating signal changes

- A) Less rapidly than the encoder can follow
- B) More rapidly than the encoder can follow
- C) Independent of any changes in the signal
- D) None of the above

39. The radio horizon distance increases if:

- A) The antenna height increases
- B) The frequency of the signal increases
- C) The antenna is moved closer to the ground
- D) The antenna height decreases

40. In a dipole array, the overall radiation pattern does not depend upon

- A) Directional patterns of the elements
- B) Spacing between the elements
- C) Phase difference between the various feed points
- D) None of the above



41. Consider the following statements regarding green hydrogen:

- i. It can be used directly as a fuel for internal combustion
- ii. It can be blended with natural gas and used as fuel for heat or power generation
- iii. It can be used in the hydrogen fuel cell to run vehicles ✓

Which of the statements given above is/are correct?

- A) i only
- B) ii only
- C) ii and iii only
- D) i, ii and iii ✓

42. Consider the following:

- i. Battery storage ✓
- ii. Biomass generators ✓
- ~~iii.~~ Fuel cells ✗
- iv. Rooftop solar photovoltaic units ✓

check.

Which of the above is/are considered a "Distributed Energy Resource"?

- A) i only ✗
- B) i, ii, iii and iv ✓
- C) ii and iii ✓
- D) i, ii and iv

43. The term "pumped-storage hydropower" has been recently highlighted in the context of which of the following?

- ~~A)~~ Irrigation of terraced agricultural land
- ~~B)~~ Lift irrigation for cereal crop cultivation
- C) Long-duration storage of electrical energy ✓
- ~~D)~~ Rainwater collection and harvesting systems

44. With reference to solar water pumps, consider the following statements:
- i. Solar power can be used for running surface pumps, except submersible pumps
 - ii. Solar power can be used for running centrifugal pumps, except those with a piston

Which of the statements given above is/are correct?

- A) i only
- B) ii only
- C) Both i and ii
- D) Neither i nor ii

45. Biomass gasification is considered to be one of the sustainable solutions to the power crisis in India. In this context, which of the following statements is/are correct?

- i. Coconut shells, groundnut shells and rice husk can be used in biomass gasification
- ii. The combustible gases generated from biomass gasification consist of hydrogen, argon and carbon dioxide
- iii. The combustible gases generated from biomass gasification can be used for direct heat generation

Select the correct answer using the codes given below:

- A) i only
- B) ii and iii only
- C) i and iii only
- D) i, ii and iii

46. Microbial fuel cells are considered a source of sustainable energy. Why?
- i. They use living organisms as catalysts to generate electricity from certain substrates
 - ii. They use a variety of inorganic materials as substrates
 - iii. They can be installed in wastewater treatment plants to cleanse water and produce electricity

Which of the following statements given above is/are correct?

- A) i only
- B) ii and iii only
- C) i and iii only
- D) i, ii and iii

(Set - A)

47. The Ocean Thermal Energy Conversion (OTEC) uses _____.
- Energy difference
 - Potential difference
 - Kinetic difference
 - Temperature difference ✓
48. Ocean thermal energy conversion is characterised by having _____.
- High efficiency and low installation cost
 - Low efficiency and high installation cost ✓
 - Low efficiency and low installation cost
 - High efficiency and high installation cost
49. Which of the following statements about surge tanks is INCORRECT?
- The ideal location of the surge tank is at the turbine inlet
 - A decrease in load demand causes a rise in water level in the surge tank T
 - Surge tanks are completely closed to avoid the entry of unwanted objects into the penstock F ✓
 - Surge tanks are installed to reduce the harmful effects of the water hammer phenomenon T
50. A penstock in a hydroelectric power plant is _____.
- A conduit connecting the forebay to the scroll case of the turbine ✓
 - A nozzle that releases high-pressure water on turbine blades
 - A pipe connected to the runner outlet
 - A pipe connecting the surge tank to the dam
51. Which of the following is NOT a reaction turbine?
- Francis turbine
 - Pelton wheel turbine ✓
 - Kaplan turbine
 - Propeller turbine

52. What is the runaway speed of the runner of the Pelton wheel?
- ☒ A) Maximum unsafe speed of the runner due to a sudden increase in load on the turbine
 - ☒ B) Minimum safe speed of the runner due to a sudden decrease in load on the turbine
 - ☐ C) Minimum safe speed of the runner due to a sudden increase in load on the turbine
 - ☒ D) Maximum unsafe speed of the runner due to a sudden decrease in load on the turbine

53. Which type of windmill has better efficiency?

- ☐ A) Vertical type wind mills
- ☐ B) Darrieus type machines
- ☒ C) Horizontal type windmills
- ☐ D) Magnus effect rotor

54. A two-blade wind turbine produces maximum power when the tip-speed ratio is approximately

- ☒ A) 2π
- ☐ B) 0.473
- ☐ C) 3π
- ☐ D) 0.593

55. The power output from a hydroelectric power plant depends on which of the following parameters?

- ☒ A) Head, type of dam, and discharge
- ☒ B) Head, discharge, and efficiency of the system
- ☒ C) Efficiency of the system, type of draft tube, and type of turbine used
- ☒ D) Type of dam, discharge, and type of catchment area

(Set - A)

(16)

56. What is the primary goal of energy management?
- ☐ A) Maximising energy consumption
 - ☒ B) Optimising energy usage ✓
 - ☐ C) Minimising energy efficiency ✗
 - ☐ D) Reducing energy conservation
57. Which factor is NOT typically considered in the selection of a site for a hydroelectric power station?
- A) Geological stability ✓
 - B) Vegetation density ✓
 - C) Water flow variability ✓
 - ☒ D) Wind speed
58. What is the significance of lighting in energy conservation efforts?
- A) Lighting has no impact on energy consumption
 - B) Brighter lighting increases energy efficiency
 - C) Energy-efficient lighting reduces electricity usage ✓
 - D) Dim lighting improves energy conservation
59. The solar heater function is to convert the solar energy into:
- ☒ A) Thermal Energy
 - B) Mechanical Energy
 - C) Electrical Energy
 - D) Chemical Energy
60. Which of the following types of draft tubes has the minimum efficiency?
- A) Elbow draft tube with varying cross-section shape ✗
 - B) Simple elbow draft tube ✓
 - C) Conical draft tube ✗
 - D) Moody spreading draft tube ✗

61. Fill in the blank with appropriate word(s): I had been working all afternoon and have just finished the assignment.

- A) had been —
 B) have been
 C) shall be
 D) am

62. Which tense is used to express an action that had began in the past before some point and continued up to that point?

- A) Past indefinite tense
 B) Past perfect tense
 C) Past perfect continuous tense
 D) Past continuous tense

63. What is the meaning of the idiom "Backstairs Influence"?

- A) Secret and unfair influence ✓
 B) Backing Influence
 C) Political Influence
 D) Deserving and proper influence

64. Out of the four alternatives given, choose the one that can best substitute the word: CHIDE

- A) Prevent
 B) Rescue
 C) Follow
 D) Scold ✓

65. The following sentence has been split into four segments. Identify the segment that contains a grammatical error: Daniel sat on / his new bike / and went afar / a ride.

- A) Daniel sat on ✓
 B) his new bike ✓
 C) and went afar ✓
 D) a ride —

66. Which command in MS-DOS displays only file and directory names without size, date and time information?

- A) DIR /W
- B) DIR/A:
- C) DIR /S
- D) DIR /B

67. The Unix operating system is a:

Linux

- A) Time-sharing operating system
- B) Multi-user operating system ✓
- C) Multitasking operating system ✓
- D) All options are correct ✓

68. A program that provides a software interface to hardware devices is called?

- A) Application Software
- B) Device Driver ✓
- C) System Software
- D) All of the above

69. Which file format is typically used to save 3D models in 3ds Max?

- A) .max ✓
- B) .psd
- C) .obj
- D) .dvg

70. Which of the following is a key application of Computer-Aided Design (CAD) in industrial engineering?

- A) Product design and visualisation ✓
- B) Production scheduling
- C) Manufacturing process simulation
- D) Material handling system optimisation

71. Which of the following bus structures is usually used to connect I/O devices?

- A) Single bus ✓
- B) Multiple bus
- C) Star bus
- D) Parallel Bus

Check

72. The first generation computers used _____ for circuitry and _____ for memory.
- A) Transistor and Magnetic drums
 - B) Vacuum tubes and Magnetic drum
 - C) IC and Magnetic tapes
 - D) IC and solid-state devices

73. Which of the following protocols is used for receiving or retrieving emails?
- A) FTP
 - B) HTTP
 - C) MIME
 - D) IMAP

74. In MS Word, a character that is raised and smaller above the baseline is known as
- A) Outlined
 - B) Raised
 - C) Superscript
 - D) Subscript

75. Which layer in the OSI model is responsible for managing network connections?
- A) Network Layer
 - B) Session Layer
 - C) Data Link Layer
 - D) Physical Layer

76. You can set the Page Border in MS Excel from
- A) From Border tab in Format Cells dialog box
 - B) From Border tool in Formatting toolbar
 - C) From Line Style tool in Drawing toolbar
 - D) You cannot set a page border in Excel

77. To insert a hyperlink in a slide

- A) Choose Insert >> Hyperlink
- ~~B) Press Ctrl + K~~
- C) Hyperlinks can't be inserted in slides
- ~~D) Both (A) & (B)~~

78. Which of the following is/are an example of an email service provider?

- i. Outlook ✓
- ii. Gmail ✓
- iii. Yandex

A) i and ii

~~B) iii only~~

~~C) i only~~

~~D) i, ii and iii~~

Yandex,

79. In a web browser, which of the following is responsible for displaying the web pages?

~~A) Server~~

~~B) Rendering engine~~

C) Cache ✗

D) Address Bar ✗ → Admin

80. CryptoLocker is an example of which type of malware?

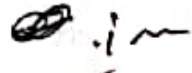
A) Ransomware ✓

B) Adware

C) Spyware

D) Worms

81. Which one is not coming under cautionary signs?

A) Sharp Curve  or info

B) No Parking ✓

C) Slippery Road 

D) Narrow Bridge 

82. The erosion between shoulder and pavement leads to _____

- A) Drop
- B) Break down
- C) Edge drop ✓
- D) Flat drop

83. According to IS classification system, the soils can be classified into _____

- A) 15 groups
- B) 18 groups ✓
- C) 03 groups
- D) 07 groups

84. The deformation per unit length is called _____

- A) Strain ✓
- B) Tensile stress
- C) Compressive stress
- D) Stress

85. The internal resistance which the body offers to meet the load or external force is called _____

- A) Stress ✓
- B) Strain
- C) Pressure
- D) None of the above

86. As per third twenty-year road development plan 1981-2001, the urban roads are classified into four categories. Choose the correct order.

- A) National highways, State highways, Village roads, Other district roads
- B) Arterial roads, Sub-arterial roads, Collector streets, Local streets ✓
- C) Primary system, Secondary system, Tertiary system, Village roads
- D) None of the above

87. Consider the following statements:

Statement 1: East Indian Railway company was established by R. M. Stephenson in 1845.

Statement 2: In 2008, Kalka-Shimla railway declared as World Heritage site by UNESCO.

Choose the correct option.

- A) Statement 1 is correct and Statement 2 is incorrect
- B) Statement 2 is correct and Statement 1 is incorrect
- ☒ C) Statement 1 and 2 are correct
- D) Statement 1 and 2 are incorrect

88. Consider the following statements:

Statement 1: The main components of a highway on embankments are: Embankment or fill, Subgrade, Drainage layer, Shoulders, and Pavement layers. ✓

Statement 2: Corrugations is longitudinal deformation or depression of the pavement surface along the wheel paths of heavy vehicles. ✓

Choose the correct option.

- ☒ A) Statement 1 is correct and Statement 2 is incorrect
- B) Statement 2 is correct and Statement 1 is incorrect
- C) Statement 1 and 2 are correct ✓
- D) Statement 1 and 2 are incorrect

89. Consider the following statements:

Statement 1: A reaction turbine is one in which only a part of the potential energy of waste water is converted into purified water and the balance remains as head rate of process.

Statement 2: In a Pelton's wheel, the total potential head is changed into kinetic head for affecting the motion of the runner, while in a Francis wheel, only a part of it is converted.

Choose the correct option:

- A) Statement 1 is correct and Statement 2 is incorrect
- ☒ B) Statement 2 is correct and Statement 1 is incorrect ✓
- C) Statement 1 and 2 are correct
- D) Statement 1 and 2 are incorrect

90. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I (Type)

- 1. Surface Source
- 2. Sub-surface Source
- 3. Type of precipitation

List - II

- i. Infiltration galleries
- ii. Cyclonic
- iii. Storage reservoirs

Choose the correct option:

- ☒ A) (1) - i, (2) - ii, (3) - iii
- ☒ B) (1) - ii, (2) - iii, (3) - i
- ☒ C) (1) - iii, (2) - i, (3) - ii ✓
- ☒ D) (1) - iii, (2) - ii, (3) - i

91. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I (Type of Turbine)

1. Pelton Turbine
2. Francis Turbine
3. Kaplan and Propeller Turbines

List - II (Specific Speed in RPM)

- i. 10 to 35
- ii. 60 to 300
- iii. 300 to 1000

- A) (1) - i, (2) - ii, (3) - iii ✓
~~B) (1) - ii, (2) - iii, (3) - i~~
~~C) (1) - iii, (2) - i, (3) - ii~~
~~D) (1) - iii, (2) - ii, (3) - i~~

high head low discharge

$$N_s = \frac{N \sqrt{P}}{H^{5/4}}$$

92. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I

1. Coarse grained components
2. Fine grained components
3. Peat

List - II

- i. High Organic, Large Organic Matter, Particles of Decomposed Vegetation
- ii. Boulder, Cobble, Gravel, Sand
- iii. Silt, Clay, Organic Matter

Choose the correct option:

- ~~A) (1) - i, (2) - ii, (3) - iii~~
~~B) (1) - ii, (2) - iii, (3) - i~~
~~C) (1) - iii, (2) - i, (3) - ii~~
 D) (1) - iii, (2) - ii, (3) - i ✓

93. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I

1. Simple Stress
2. Indirect Stress
3. Ratio of lateral strain to linear strain
4. Ratio of linear stress to linear strain

List - II

- i. Poisson's ratio
- ii. Torsion
- iii. Shear
- iv. Modulus of elasticity

Choose the correct option:

- ~~A) (1) - ii, (2) - iii, (3) - i, (4) - iv~~
~~B) (1) - ii, (2) - iii, (3) - iv, (4) - i~~
~~C) (1) - iii, (2) - ii, (3) - iv, (4) - i~~
 D) (1) - iii, (2) - ii, (3) - i, (4) - iv ✓



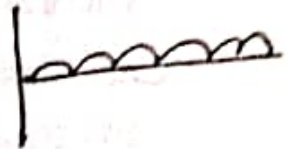
94. Consider the following statements:

Statement 1: In a cantilever with uniformly distributed load, the shearing force varies following a linear law. ✓

Statement 2: Bending moment at supports in case of simply supported beams is always zero. ✗

Choose the correct option:

- A) Statement 1 is correct and Statement 2 is incorrect
B) Statement 2 is correct and Statement 1 is incorrect
C) Statement 1 and 2 are correct ✓
D) Statement 1 and 2 are incorrect



95. In a cantilever, carrying a load whose intensity varies uniformly from zero at the free end to 'w' per unit run at the fixed end, the bending moment changes following a _____

- A) Cubic law ✓
B) Parabolic law ✗
C) Linear law ✗
D) None of the above



$$L = \frac{w \times l}{2}$$

$$S.F. = \frac{w^2}{2}$$

96. Which of the following forms the basis of rigid bodies and strength of materials? MoI.

- A) Centroid
B) Centre of gravity
C) Moment of Inertia ✓
D) None of the above

no work in C.O.G.
in S.O.M.

97. The _____ is defined as the point where the whole area of the figure is assumed to be concentrated.

- A) Centroid ✓
B) Centre of gravity
C) Moment of Inertia
D) None of the above

98. Consider the following statements:

- i. The quality of wastewater is determined on the basis of DO
- ii. The BOD test is based on DO.
- iii. Determination of DO helps in controlling corrosion.

Which of the above statements are correct?

- ☒ A) i and ii
- B) ii and iii
- C) i and iii
- ☒ D) i, ii, and iii

99. Standard BOD is measured at _____

- A) 20°C - 3 days
- ☒ B) 20°C - 5 days
- C) 25°C - 3 days
- D) 25°C - 5 days

100. The system to collect night soil, garbage etc. in separate vessels or deposited in pools and pits is called _____

- ☒ A) Conservancy system
- B) Waste allocation system
- C) Waste deposition system
- D) Waste pit

101. The frictional torque transmitted by a disc or plate clutch is same as that of _____

- A) Flat pivot bearing
- ☒ B) Flat collar bearing
- C) Conical pivot bearing
- D) Trapezoidal pivot bearing

102. The frictional torque transmitted by a cone clutch is same as that of _____
- A) Flat pivot bearing
 - B) Flat collar bearing
 - C) Conical pivot bearing
 - ☒ D) Trapezoidal pivot bearing

103. When the elements of the pair are kept in contact by the action of external forces, the pair is said to be a _____
- A) Lower pair
 - B) Higher pair
 - C) Self closed pair
 - ☒ D) Force closed pair

104. Any transfer of energy to a system by virtue of temperature difference is known as _____

- A) Turbine
- B) Supply
- ☒ C) Heat
- D) Moment of Inertia

105. _____ reduces the pressure of the refrigerant, and also regulates the flow of the refrigerant to the evaporator.

- A) Condenser
- ☒ B) Expansion device
- C) Evaporator
- D) None of the above

106. Consider the following statements:

Statement 1: A flywheel used in machines serves as a reservoir, which stores energy during the period when the supply of energy is more than the requirement, and release it during the period when the requirement of energy is more than the supply.

Statement 2: A flywheel controls the speed variations caused by the fluctuation of the engine turning moment during each cycle of operation.

Choose the correct option:

- A) Statement 1 is correct and Statement 2 is incorrect
- B) Statement 2 is correct and Statement 1 is incorrect
- ☒ C) Statement 1 and 2 are correct
- D) Statement 1 and 2 are incorrect

107. Consider the following statements:

Statement 1: A governor is said to be unstable when for every speed within the working range there is an undefined configuration in equilibrium.

Statement 2: A governor is said to be hunt if the speed of the engine is constant and maintain 20% above the mean speed.

Choose the correct option:

- A) Statement 1 is correct and Statement 2 is incorrect
- B) Statement 2 is correct and Statement 1 is incorrect
- C) Statement 1 and 2 are correct
- ☒ D) Statement 1 and 2 are incorrect

108. Consider the following statements:

Statement 1: The efficiency of a screw jack may be defined as the product of ideal effort and the deviations from the actual effort. ✗

Statement 2: The collar bearings are also known as thrust bearing.

Choose the correct option:

- A) Statement 1 is correct and Statement 2 is incorrect
- ☒ B) Statement 2 is correct and Statement 1 is incorrect
- C) Statement 1 and 2 are correct
- D) Statement 1 and 2 are incorrect

109. Consider the following statements:

Statement 1: The motion of a piston in the cylinder of a steam engine is an example of completely constrained motion. ✓

Statement 2: The cam and follower without a spring forms a self closed pair.

Choose the correct option:

- A) Statement 1 is correct and Statement 2 is incorrect
- B) Statement 2 is correct and Statement 1 is incorrect
- ☒ C) Statement 1 and 2 are correct
- D) Statement 1 and 2 are incorrect

110. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I

1. Hartnell Governor
2. To drive a gramophone
3. More sensitive

- A) 1) - i, 2) - ii, 3) - iii
- B) 1) - ii, 2) - iii, 3) - i
- ☒ C) 1) - iii, 2) - i, 3) - ii
- D) 1) - iii, 2) - ii, 3) - i

List - II

- i. Pickering governor
- ii. Hunting governor
- iii. Spring loaded governor

(Set - A)

111. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I (Terms in Screw)

1) Lead

2) Pitch

3) Helix

List - II (Description)

i. It is the curve traced by a particle, while describing a circular path at a uniform speed and advancing in the axial direction at a uniform rate.

ii. It is the distance from a point of screw to a corresponding point on the next thread, measured parallel to the axis of the screw.

iii. It is the distance; a screw thread advances axially in one turn.

A) (1) - i, (2) - ii, (3) - iii

B) (1) - ii, (2) - iii, (3) - i

C) (1) - iii, (2) - i, (3) - ii

D) (1) - iii, (2) - ii, (3) - i

112. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I (Type of Joints)

1. Ternary Joint

2. Quaternary Joint

3. Binary Joint

List - II (Number of links)

i. 2 links

ii. 3 links

iii. 4 links

A) (1) - i, (2) - ii, (3) - iii

B) (1) - ii, (2) - iii, (3) - i

C) (1) - iii, (2) - i, (3) - ii

D) (1) - iii, (2) - ii, (3) - i

113. Match List - I with List-II and select the correct answer using the codes given below the lists:

List - I (Properties of fluid)

1. Surface tension

2. Viscosity

3. Dynamic Viscosity

List - II

i. is a measure of a fluid's resistance to flow

ii. also known as absolute viscosity

iii. is more relevant in phenomena such as capillary action, droplet formation

A) (1) - i, (2) - ii, (3) - iii

B) (1) - ii, (2) - iii, (3) - i

C) (1) - iii, (2) - i, (3) - ii

D) (1) - iii, (2) - ii, (3) - i

114. Which one of the following laws is applicable to a hydraulic lift?

- A) Kirchhoff's Law
- ☒ B) Pascal's Law
- C) Archimedes Law
- D) None of the above

115. What is the number of jaws in self-centred chuck?

- A) 8
- B) 6
- ☒ C) 4
- D) 3

116. Choose the correct order of the following metal as per MOHS hardness scale range from 1 to 10.

- A) Talc, Calcium, Copper, Cobalt, Diamond
- B) Talc, Calcium, Diamond, Copper, Cobalt
- C) Copper, Cobalt, Diamond, Talc, Calcium
- D) Copper, Cobalt, Diamond, Calcium, Talc

117. _____ is the property of the material that enables it to be drawn out or elongated to an appreciable extent before rupture occurs.

- ☒ A) Flakiness
- ☒ B) Abrasion
- C) Ductility
- ☒ D) Absorption

118. Choose the classification automobiles based on purpose

- A) LCV, MCV, HCV
- ☒ B) Passenger vehicle, Goods vehicle, Special vehicle
- ☒ C) Front, Rear, Back wheel base
- ☒ D) Closed, Open, Special Style

Light cv.

119. The primary reason for diesel engines having more efficiency than gasoline engines is they _____

- A) Have a longer stroke
- ☒ B) Have a higher compression ratio
- C) Use a different fuel
- D) Operate at high temperatures

120. When a bus starts suddenly, the passengers are pushed back. This is example of which of the following?

- ☒ A) Newton's first law
- B) Newton's second law
- C) Newton's third law
- D) None of the above



Adda247