

**DO NOT BREAK THE SEAL UNTIL YOU GO THROUGH THE  
FOLLOWING INSTRUCTIONS**

**QUESTION BOOKLET**

**Name of Post –WORKS MANAGER**

**Roll No.**

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**Booklet Series B**

(Enter your Roll number in the above space)

**Time Allowed: 2 Hour**

**Max. Marks: - 100**

**INSTRUCTIONS :**

1. Use only BLUE/BLACK Ball Point Pen.
2. All questions are COMPULSORY.
3. All questions carry equal marks.
4. Check the BOOKLET thoroughly.

IN CASE OF ANY DEFECT - MISPRINT, MISSING QUESTION/S, GET THE BOOKLET CHANGED. NO COMPLAINT SHALL BE ENTERTAINED AFTER THE TEST.

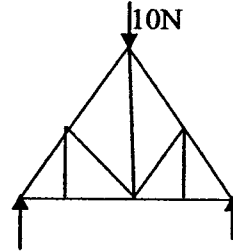
5. Before you mark the answer, fill the particulars in the ANSWER SHEET carefully and correctly. Incomplete & Incorrect particulars may result in your answer sheet not being evaluated by the Computer.
6. After completing the test, handover the ANSWER SHEET to the Invigilator.
7. For Rough Work, Blank Sheet is provided at the end of the question – booklet
8. Before filling up the Answer Sheet, Read the instructions for marking the answer sheet carefully printed on the answer sheet.
9. Write the BOOKLET SERIES given at the TOP RIGHT HAND SIDE of the question booklet in the space provide in the answer sheet, by darkening the corresponding circles.

SEAL

**Note:** Each question carries one mark. There will be no negative marking.

1. How many members have zero forces in the truss given

- (a) 4
- (b) 5
- (c) 3
- (d) 2



2. In pure bending

- (a) Shear force remains constant
- (b) Bending moment remains constant
- (c) Shear force is zero
- (d) Both (b) and (c)

3. Ties are load carrying members which carry

- (a) Torsional loads
- (b) Axial compressive loads
- (c) Axial tension load
- (d) None of the above

4. Cross head and guides form a

- (a) Lower pair
- (b) Higher pair
- (c) Turning pair
- (d) Sliding pair

5. The Bifilar suspension method is used to determine

- (a) Natural frequency of vibration
- (b) Position of balancing weight
- (c) Moment of inertia
- (d) Centripetal acceleration

6. Coriolis's component acts

- (a) Perpendicular to the sliding surfaces
- (b) Along sliding surfaces
- (c) Somewhere in between the above two
- (d) None of the above

7. Which of the following is not a flexible coupling

- (a) Universal
- (b) Muff
- (c) Oldham's
- (d) None of the above

8. For  $20^\circ$  pressure angle, minimum number of teeth on gear will be
- (a) 6 (b) 12  
(c) 17 (d) 20
9. Which key transmits power through frictional resistance only
- (a) Woodruff (b) Kennedy  
(c) Sunk (d) Saddle
10. The following type of cam follower is generally in automobiles
- (a) Mushroom type (b) Roller type  
(c) Flat type (d) Spherical type
11. The crystal of alpha iron is
- (a) BCC (b) FCC  
(c) HCP (d) None of the above
12. Manganese in steel increases
- (a) Tensile strength (b) Hardness  
(c) Ductility (d) Malleability
13. German silver contains
- (a) 1% Silver (b) 2.5% Silver  
(c) 5% Silver (d) 10% Silver
14. Nickel is
- (a) Ferromagnetic (b) Ferroelectric  
(c) Paramagnetic (d) Dielectric
15. Which of the following is non-destructive test
- (a) Tensile test (b) Impact test  
(c) Charpy test (d) Radiography test

16. In arc welding, temperature of the following order may be generated
- (a) 1000°C (b) 1500°C  
(c) 5500°C (d) 8000°C
17. Which welding process uses consumable electrode
- (a) TIG (b) MIG  
(c) Thermit (d) LASER
18. Weld spatter refers to
- (a) Welding electrode (b) Flux  
(c) Welding defect (d) Filler material
19. Which of the following is not a casting defect
- (a) Hot tear (b) Blow hole  
(c) Scab (d) Decarburization
20. In EDM process the work piece is connected to
- (a) Positive (b) Negative  
(c) Earth (d) None of the above
21. What does symbol 'D' imply in work study
- (a) Inspection (b) Transport  
(c) Delay / Temporary storage (d) None of the above
22. Acceptance sampling is widely used in
- (a) Job production (b) Batch Production  
(c) Mass Production (d) None of the above
23. Which of the following plans motivates supervisors by paying premium on time saved by workers
- (a) Halsey Plan (b) Rowan Plan  
(c) Emerson's Plan (d) Hayness Plan

24. Wickman gauge is used for inspection of
- (a) Holes (b) Shafts  
(c) Gears (d) Screw threads
25. A beam having more than two supports is called
- (a) Overhanging beam (b) Cantilever beam  
(c) Continuous beam (d) All of the above
26. Absolute zero pressure will occur
- (a) At sea level  
(b) At the centre of the earth  
(c) When molecular momentum of the system becomes zero  
(d) Under vacuum conditions
27. The slope of constant pressure line on temperature entropy diagram is given by
- (a)  $C_p/T$  (b)  $T/C_p$   
(c)  $S/T$  (d)  $T/S$
28. Equivalent evaporation is the amount of water evaporated in a boiler from at
- (a)  $0^\circ\text{C}$  (b)  $100^\circ\text{C}$   
(c) Room temperature (d)  $20^\circ\text{C}$
29. Lancashire boiler is of
- (a) Stationary fire tube type (b) Horizontal type  
(c) Natural circulation type (d) All of the above
30. An economizer in a boiler
- (a) Increases steam pressure (b) Decreases steam pressure  
(c) Decreases fuel consumption (d) Increases steam flow
31. Maximum energy loss in a boiler occurs due to
- (a) Fuel gases (b) Incomplete combustion  
(c) Ash content (d) Unburnt carbon in ash

32. William's line for steam engine is the straight line relationship between mass rate of steam flow and

- (a) IHP
- (b) BHP
- (c) Efficiency
- (d) Compression ratio

33. The main function of a stuffing box in a steam engine is to

- (a) Guide the piston rod
- (b) Receive steam from engine
- (c) Minimize missing quantity
- (d) Prevent leakage

34. Curtis turbine is a

- (a) Simple Impulse turbine
- (b) Simple reaction turbine
- (c) Velocity compounded turbine
- (d) Pressure compounded turbine

35. The ratio of adiabatic heat drop to the heat supplied is known as

- (a) Rankine efficiency
- (b) Reheat factor
- (c) Stage efficiency
- (d) Efficiency ratio

36. Aeroplanes employ following type of compressor

- (a) Radial type
- (b) Axial type
- (c) Centrifugal type
- (d) None of the above

37. For a compressor, least work will be done if the compression is

- (a) Isotropic
- (b) Isothermal
- (c) Polytropic
- (d) None of the above

38. Phenomenon of choking in compressor means

- (a) Fixed mass flow rate regardless of pressure ratio
- (b) No flow of air
- (c) Reducing mass flow rate with increase in pressure ratio
- (d) None of the above

39. Which of the following has least value of conductivity?
- (a) Glass (b) Water  
(c) Plastic (d) Air
40. The emissive power of a body depends upon its
- (a) Temperature (b) Wave length  
(c) Physical nature (d) All of the above
41. The COP of a domestic refrigerator
- (a) Is less than 1 (b) Is more than 1  
(c) Is equal to 1 (d) Depends upon the weather conditions
42. Moisture in a refrigerant system is removed by
- (a) Driers (b) Filter driers  
(c) Dessicants (d) All of the above
43. As warm air cools, its relative humidity
- (a) Increases  
(b) Decreases  
(c) Increases up to a limit and then decreases  
(d) Decreases up to a limit and the increases
44. If bypass factor is B during sensible cooling of air, then coil efficiency is give by
- (a)  $1 - B$  (b)  $B - 1$   
(c)  $1/B$  (d) None of the above
45. Rain drops are spherical because of
- (a) Viscosity (b) Air resistance  
(c) Surface tension force (d) Atmospheric pressure
46. Hot wire anemometer is used to measure
- (a) Pressure in gases (b) Temperature  
(c) Gas velocity (d) Pressure in liquids

47. Velocity distribution in the turbulent boundary layer follows following law

- (a) Linear (b) Square  
(c) Parabola (d) Logarithmic

48. Mach number greater than unity implies that the flow is

- (a) Sonic (b) Subsonic  
(c) Supersonic (d) Hypersonic

49. For a machine to be self locking. Its efficiency should be

- (a) 100% (b) Less than 67%  
(c) Less than 50% (d) More than 50%

50. A plot between power generated in MW and time is known as

- (a) Load curve (b) Load factor  
(c) Demand curve (d) None of the above

51. In which city of Haryana was the great epic Mahabharata written by Ved Vyas?

- (a) Hisar (b) Sonipat  
(c) Yamuna-Nagar (d) Kurukshetra

52. Which place of Haryana was the political as well as social working place of freedom fighter

Lala Lajpat Rai?

- (a) Ambala (b) Jhajjar  
(c) Jind (d) Hisar

53. How many seats are allotted to lower house of Parliament from Haryana?

- (a) 8 (b) 10  
(c) 12 (d) 18

54. When was Ambala established as a cantonment area (Military base)

- (a) 1839 (b) 1841  
(c) 1843 (d) 1848



55. Who was the first Governor of Haryana?
- (a) B.N.Chakravorty (b) R.S.Narula  
(c) Dhanik Lal Mandal (d) Dharam Veer
56. When was Bhiwani textile mill established?
- (a) 1932 (b) 1937  
(c) 1943 (d) 1948
57. Which of following factories are established at Faridabad?
- (a) Rubber tyre (b) Tractor  
(c) Refrigerator (d) all of the above
58. Who constructed the famous 'Sarveshwar Mahadeo Temple' at Kurukshetra
- (a) J.K.Birla (b) Baba Tarak Nath  
(c) Baba Sarwan Nath (d) Baba Shivgiri
59. Which district of Haryana covers the maximum area ?
- (a) Ambala (b) Gurgaon  
(c) Bhiwani (d) Sonipat
60. Geeta Jutsi the famous player of Haryana associated with-
- (a) Chess (b) Weight lifting  
(c) Lawn tennis (d) Athletics
61. United Nations day is celebrated on-
- (a) 27<sup>th</sup> October (b) 24<sup>th</sup> October  
(c) 24<sup>th</sup> September (d) 27<sup>th</sup> September
62. Table tennis is the National game of
- (a) Sri Lanka (b) Canada  
(c) China (d) Bangladesh

63. Who was the last Governor General of India

- (a) Sir Cripps (b) Lord Mountbatten  
(c) C. Rajagopalchari (d) Sir Attlee

64. The deficiency of Vitamin B causes-

- (a) Scurvy (b) Dermatitis  
(c) Phynoderma (d) Beri-beri

65. Who was the second man to land on the moon?

- (a) Yuri Gagrin (b) Neil Armstrong  
(c) Buzz Aldrin (d) Michael Collins

66. Bhilai Steel Plant was built in collaboration with -

- (a) Germany (b) Soviet Union  
(c) United Kingdom (d) Japan

67. The Qutub Minar was completed by the famous ruler-

- (a) Iltutmish (b) Qutub-uddin Aibak  
(c) Firoz Shah Tughlaq (d) Alauddin Khilji

68. Birds usually have a single-

- (a) Kidney (b) Lung  
(c) Testis (d) Ovary

69. Which Constitutional Amendment is related to Panchayati Raj?

- (a) 52<sup>nd</sup> (b) 62<sup>nd</sup>  
(c) 72<sup>nd</sup> (d) 73<sup>rd</sup>

70. 43<sup>rd</sup> India International Garment fair was organized during July15-17,2009 in

- (a) Mumbai (b) Surat  
(c) New Delhi (d) Hyderabad

71. The third Twenty-20 Cricket World Cup will be organized in-
- (a) Australia (b) Kenya  
(c) South Africa (d) West Indies
72. 'The Idea of Justice' is the book authored by
- (a) Murtaza Rizvi (b) Amartya sen  
(c) Dharmendra Bhandari (d) A.R. Laxman
73. Who was the first Chief Minister of Haryana?
- (a) Banarsi Das Gupta (b) Rao Virendra Singh  
(c) Bhajan Lal (d) Bhagwat Dayal Sharma
74. In India Money Bill is first presented in-
- (a) The Rajya Sabha (b) The Lok Sabha  
(c) Finance Commission (d) None of the above
75. The name of India's research station at the North Pole is
- (a) Dakshin Gangotri (b) Maitri  
(c) Himadri (d) None of the above
76. The most popular firing order in the four-cylinder in line I.C. engine is-
- (a) 1-2-3-4 (b) 1-3-2-4  
(c) 1-3-4-2 (d) 1-2-4-3
77. The pressure at the end of compression in a C.I engine is of the order of
- (a) 10 bar (b) 16 bar  
(c) 25 bar (d) 35 bar
78. For the same maximum pressure and heat supplied, the efficiency is maximum for
- (a) Otto Cycle (b) Diesel cycle  
(c) Dual cycle (d) None of the above

79. The ratings of C.I. engine fuel is given by
- (a) Octane number
  - (b) Performance number
  - (c) Cetane number
  - (d) None of the above
80. By reducing compression ratio, the knocking tendency in C.I. engine will
- (a) Increases
  - (b) Decreases
  - (c) Not take place
  - (d) None of the above
81. The mixture requirement of an S.I. engine under normal running on road is
- (a) A stoichiometric mixture
  - (b) A rich mixture
  - (c) A lean mixture
  - (d) None of the above
82. Cetane number is the measure of
- (a) Viscosity of fuel
  - (b) Auto-ignition temperature
  - (c) Ignition quality
  - (d) Calorific value
83. Air fuel ratio for idling of a S.I. engine is approximately
- (a) 5:1
  - (b) 10:1
  - (c) 15:1
  - (d) 20:1
84. The purpose of venturi in the carburetor is to work as
- (a) Pump
  - (b) Compressor
  - (c) Ejector
  - (d) None of the above
85. Scavenging is usually done to increase
- (a) Fuel consumption
  - (b) Speed
  - (c) Power output
  - (d) None of the above
86. Increasing the compression ratio in S.I. engine
- (a) Increases the tendency for knocking
  - (b) Decreases the tendency for knocking
  - (c) Does not affect knocking
  - (d) None of the above

87. Which of the following fuel has a cetane number of 100?
- (a) Normal heptanes (b) Ethyl fluid  
(c) Cetane (d)  $\alpha$ -methyl naphthalene
88. Detonation can be controlled by
- (a) Reducing the r.p.m (b) Retarding the spark timing  
(c) Varying compression ratio (d) None of the above
89. In the differential unit of a passenger car the gear ratio is of the order of
- (a) 3:1 (b) 6:1  
(c) 8:1 (d) 10:1
90. The word castor is associated with which of the following?
- (a) Transmission system (b) Braking system  
(c) Front axle alignment (d) None of the above
91. Automobile horns are----- type
- (a) Sinusoidal and digital (b) Primary and secondary  
(c) Wind cone and disc (d) None of the above
92. If the intake air temperature of I.C. engine increases, its efficiency
- (a) Increases (b) Decreases  
(c) Remains same (d) Unpredictable
93. As a result of detonation in an I.C. engine, following parameter attains very high value
- (a) Peak pressure (b) Rate of rise of pressure  
(c) Rate of rise of temperature (d) Peak temperature
94. The accumulation of carbon in a cylinder results in increase of
- (a) Clearance volume (b) Volumetric efficiency  
(c) Ignition time (d) Effective compression ratio

95. Normal heptane

- (a) Accelerate auto-ignition (b) Helps to resist auto-ignition  
(c) Does not affect auto-ignition (d) Retard auto-ignition

96. At which of the following place was the famous battle of Panipat fought?

- (a) Kurukshetra (b) Sirsa  
(c) Panipat (d) Jind

97. At which place of Haryana did Lord Krishna preach the message of Geeta?

- (a) Ambala (b) Sonipat  
(c) Yamuna Nagar (d) Kurukshetra

98. In which district of Haryana is Rajdoot Motor Cycle manufactured?

- (a) Hisar (b) Karnal  
(c) Ambala (d) Faridabad

99. Where has the National Research Institute in Haryana been established?

- (a) Sirsa (b) Kurukshetra  
(c) Karnal (d) Jind

100. Where is biggest animal husbandry farm of Asia situated at Haryana?

- (a) Ambala (b) Bhiwani  
(c) Hisar (d) Rohtak