Monthly Progessive Test (Solution)

Class: VIII

Subject: PCMB

Academic Excellence Programme TECHNO ACE

Test Booklet No.: MPT02 Test Date: 10052024

Physics

1. Ⓐ
   Contact force.
2. Ⓓ
   Normal contact force.
3. Ⓐ
   Static friction
4. Ⓓ
   $f_s > f_k > f_{\text{rolling}}$
5. Ⓐ
   as $\mu_s > \mu_k$
6. Ⓑ
   Static friction as $f_{\text{lim}} = \mu_s \cdot N$
7. Ⓒ
   Friction force (static firction)
8. Ⓑ
   Friction
9. Ⓑ
   Friction force.
10. Ⓒ
11. Ⓐ
    Yes, by increasing weight of a body.
12. Ⓒ
    Lubricant, oil both can reduce friction.

13. Ⓐ

as Grooves increases grip

14. Ⓑ

vertically upward as weight acts vertically downward.

15. Ⓑ

Decreases friction

16. Ⓐ

$\frac{10-5}{5} = 1 \text{ m/s}^2$

17. Ⓒ

$N = mg = (1)(10) = 10 \text{ N} \equiv 1 \text{ kgf}$

18. Ⓓ

Weightlessness as N = 0; N is Normal contact force.

19. Ⓑ

Weight of apple.

20. Ⓓ

Mascular force

21. Ⓐ

Self-adjusting upto a certain limit.

22. Ⓒ

independent of contact area

23. Ⓓ

kinetic/sliding friction.

24. Ⓒ

Rolling friction

25. Ⓑ

Always against the direction of motion.

Chemistry

26. Ⓓ

Petrol, LPG, alcohol all are inflamable substance

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27. Ⓓ

Fire can be extinguished by bringing down ignition temperature, cutting off the supporter of fire, removal of all Combustible substance from the site of fire.

28. Ⓐ

Low ignition temperature means the substance will burn immediately and high calorific value suggests that the fuel will be very much effective for using commercially

29. Ⓐ

Hottest zone of a candle flame is non-luminous zone

30. Ⓓ

Every fuel contains carbon and hydrogen and incomplete combustion means less amount of oxygen is supplied. Hence, the correct product is carbon monoxide.

31. Ⓐ

Yellow coloured middle zone is moderately hot.

32. Ⓓ

LPG is a gaseous fuel. Calorific value of a fuel is defined as the energy released when 1 kg of fuel burns completely.

33. Ⓒ

Ignition temperature is defined as the minimum temperature at which the fuel starts burning in a normal atmosphere. So, below ignition temperature, the fuel cannot burn.

34. Ⓐ

500 gm coal releases $\frac{30000}{0.5} = 60000$ kJ heat

1 KG coal releases 30000 kJ heat

500 gm wood releases $\frac{20000}{0.5} = 40000$ kJ heat

2 kg wood release $\frac{20000}{2} = 10000$ kJ heat

35. Ⓓ

36. Ⓓ

37. Ⓑ

Paper, charcoal, petrol all are combustable substance and sand is a non-combustable substance.

38. Ⓓ

The outermost zone is the hottest part and thus this part can generate the highest amount of heat to the system. Hence, goldsmiths use that part of flame to melt gold and silver.

39. Ⓒ

40. Ⓑ

Kerosene, alcohol, diesel are liquid fuels

41. Ⓑ

PCRA is Petroleum Conservation and Research Association, established in India in the year 1978

42. Ⓐ

Wood - Peat - Lignite - Bituminus coal - Anthracite coal

43. Ⓐ

[Carbon monoxide + nitrogen] mixture is known as producer gas and it is used to generate high amount of heat energy

44. Ⓐ

Correct order of carbon content is

Peat < Lignite < Bituminus coal < Anthracite coal

45. Ⓒ

Not much temperature is needed to wick stoves. Hence, kerosene is the correct fuel for this purpose

46. Ⓐ

Red zone is absent in the candle flame

47. Ⓓ

Hydrogen has the highest calorific value and it is the best fuel.

48. Ⓑ

49. Ⓑ

Carbon dioxide is used to extinguish fire

50. Ⓒ

Outermost zone in a candle flame gives the highest temperature and hence complete combustion occurs there and forms canbon dioxide and water vapour.

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51. Ⓑ

4657 is not a perfect square because its unit place digit is 7.

52. Ⓑ

$6^2 + 8^2 = 36 + 64 = 100 = 10^2$

53. Ⓒ

Number of zeros = 4

54. Ⓐ

$1 + 3 + 5 + 7 = (4)^2 = 16$

55. Ⓐ

$675 = 5 \times 5 \times 3 \times 3 \times 3$

So, for perfect cube 675 must be divided by 25.

56. Ⓒ

Area of one face = 25 cm^2

$\therefore$ one side = 5 cm

$\therefore$ volume = 125 cm^3

57. Ⓒ

$\sqrt[3]{389017} = \sqrt[3]{73 \times 73 \times 73} = 73$

58. Ⓐ

A perfect square number between 30 and 40 is 36

59. Ⓑ

18

60. Ⓑ

$(111)^2 = 12321$

61. Ⓑ

$9^2 - 1 = 81 - 1 = 80$

62. Ⓒ

$\sqrt[3]{x}$

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63. ©

$243 = 3 \times 3 \times 3 \times 3 \times 3$

64. Ⓑ

$(14)^2 = 196, (14)^3 = 2744$

65. Ⓐ

$392 = 2 \times 2 \times 2 \times 7 \times 7$

7 should be multiplied

66. Ⓑ

$$\frac{-7}{13} + \frac{19}{26} = \frac{-14+19}{26} = \frac{5}{26}$$

67. Ⓑ

$$\frac{-3}{14} - \frac{5}{12} = \frac{-18-35}{84} = \frac{-53}{84}$$

68. Ⓓ

Additive inverse of $\frac{-23}{26} = \frac{23}{26}$

69. Ⓐ

$$\left(\frac{-3}{5}\right)^{-2} = \left(\frac{-5}{3}\right)^2 = \frac{25}{9}$$

70. Ⓐ

$3430000 = 3.43 \times 10^6$

71. Ⓐ

431

72. Ⓑ

$961 = (31)^2$

73. ©

$80 + 1 = 81$

So, 1 should be added

74. Ⓑ

$\sqrt[3]{343} \times \sqrt[3]{-64} = 7 \times (-4) = -28$

75. Ⓐ

$$\sqrt[3]{\frac{343\times125}{0.064}}=\frac{7\times5}{0.4}=\frac{7\times5\times\cancel{10}^{5}}{\cancel{4}_{2}}=\frac{175}{2}=87.5$$

Biology

76. Ⓑ

Providing water to crops

77. Ⓑ

Man made inorganic salt

Synthetic substances made in factories

78. Ⓓ

Plant & animal residues

Natural sources

79. Ⓒ

Separation of grains from chaff

80. Ⓒ

Leguminous plants

In root nodules of these plants, leguminous bacteria reside , fixing atmospheric nitrogen for the plants. In turn, the bacteria gets food and shelter from the plants (symbiotic association).

81. Ⓐ

Decrease in soil fertility

Overuse of fertilisers changes the chemical nature of soil, making it infertile over a course of time.

82. Ⓓ

NPK Fertiliser

83. Ⓒ

Crop rotation

The farmer pre plans the crops to be grown as a measure to naturally replenish the nutrients in the soil.

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84. ©

Improved water conservation

Prevents loss of water by surface run off, evaporation or percolation through the soil.

85. ©

Increasing soil fertility

86. ©

Weeding

87. ©

Rivers or reservoirs

88. Ⓐ

Nitrogen

89. Ⓓ

Fan

A fan is a tool for separating grain from chaff, while removing dirt and dust also.

90. ©

Drip irrigation

The nozzle of the pipes adds water dropwise at the base of the stem, the speed of which can be regulated.

91. ©

Animal husbandry

92. Ⓑ

Fodder crop

93. Ⓓ

Hemp

Hemp is grown for its fibres, which are used to make textile fabric.

94. Ⓐ

Cash crop

Grown for commercial purposes, like making bags, rugs, etc.

95. ©

Zaid crop

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96. Ⓐ

Weed control

97. Ⓑ

Harvested crops

98. Ⓒ

Threshing

99. Ⓐ

Surface irrigation

Water is applied in furrows dug on the surface of the field, while the seeds are sown on the elevated ridges between them.

100. Ⓓ

All of the above

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