Monthly Progessive Test

Class: VIII

Subject: PCMB

Solutions

Physics

1. Ⓑ

Weight and Upthrust

2. Ⓒ

Weight (gravity) and air resistance

3. Ⓓ

Gravity, friction and normal contact force

4. Ⓒ

Gravity (weight of the book) and normal contact force.

5. Ⓐ

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

6. Ⓒ

$N = (1 \text{ kg})(10 \text{ m/s}^2) = 10 \text{ newton} = 1 \text{ kg f}$

7. Ⓓ

as normal contact force is zero

8. Ⓑ

Weight of apple

9. Ⓑ

   like poles repel each other.

10. Ⓓ

   Mascular force

11. Ⓑ

   Weight of mango and tension

12. Ⓑ

   Weight of Cat and normal contact force

13. Ⓒ

   Gravitational

14. Ⓒ

   Electrostatic and Magnetic force

15. Ⓓ

   in opposite direction of applied force

16. Ⓑ

   Value of action and reaction forces are equal.

17. Ⓓ

   Action and reaction pair.

18. Ⓒ

   Inertia of rest, motion and directional inertia.

19. Ⓐ

   Yes

20. Ⓑ

   extended

21. Ⓓ

   $a = 10/4 = 2.5 \text{ m/s}^2$

22. Ⓐ

   $m = 19.6/9.8 = 2 \text{ kg}$

23. Ⓓ

   Mass remains same.

24. Ⓑ

Impulse = force × time $= (10)(2) = 20\,\text{N}\cdot\text{s}$

25. Ⓒ

$F \times t = mv - mu = (5)(3) = 15\,\text{kg}\,\text{m/s}$

Chemistry

26. Ⓑ

Coal burns in air to produce carbondioxide. $C + O_2 = CO_2$

27. Ⓐ

The world's first oil well was drilled in Pennsylvania, USA in 1859.

28. Ⓓ

The other name of petroleum is Black gold.

29. Ⓒ

Coke is used for the manufacturing of Steel.

30. Ⓐ

Coke is an almost pure form of carbon.

31. Ⓑ

Heavy motor vehicles and tractors run on Diesel.

32. Ⓓ

The petroleum product Bitumen is used in place of coal-tar for metalling the road.

33. Ⓓ

Renewable sources of energy are both sunlight and air.

34. Ⓒ

The example of non-renewable source of energy is coal.

35. Ⓓ

The carbon contain in the anthracite coal is 94–98%.

36. Ⓒ

The gas obtained when coal is heated in absence of air is called coal gas.

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37. Ⓒ

Petrol and diesel can be obtained from Petroleum.

38. Ⓑ

A black rocky substance mainly used as a fuel is coal.

39. Ⓒ

Coal is used in thermal power plants and produce electricity.

40. Ⓒ

Charcoal burns in air to give carbondioxide and heat.

41. Ⓒ

The slow process of conversion of dead vegetation into coal is called carbonization.

42. Ⓑ

PCRA stands for Petroleum Conservation Research Association.

43. Ⓐ

The stepwise stages for formation of coal is wood-Peat–Lignite–Bituminus coal–Anthracite.

44. Ⓓ

The unit of calorific value is Kilojoule/(kg).

45. Ⓑ

Fossil fuels were formed from dead remains of living organisms.

46. Ⓒ

Fossil fuel is an exhaustible resource.

47. Ⓐ

Producer gas is [$CO + N_2$]

48. Ⓐ

The colour of peat is light brown.

49. Ⓐ

Lowest form of carbon is present in peat

50. Ⓒ

Kerosene is used as a fuel in wick stoves

Mathematics

51. Ⓑ

$$\left(\frac{-7}{13} + \frac{19}{26}\right) = \frac{-14 + 19}{26} = \frac{5}{26}$$

52. Ⓑ

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

53. Ⓑ

0 is in between –1 and 1. So, product of all rational numbers between –1 and 1 = 0.

54. Ⓓ

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

55. Ⓐ

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

56. Ⓒ

$$(1)^{-1} + \left(\frac{1}{2}\right)^{-1} + \left(\frac{1}{3}\right)^{-1} = 1 + 2 + 3 = 6$$

57. Ⓐ

$3430000 = 3.43 \times 10^{6}$

58. Ⓓ

$$\frac{1}{2} \div \frac{3}{5} = \frac{1}{2} \times \frac{5}{3} = \frac{5}{6}$$

59. Ⓐ

Additive identity of rational numbers = 0.

60. Ⓐ

$$\frac{2}{9} \times \frac{3}{4} = \frac{1}{6}$$

61. Ⓑ

Multiplicative identity of rational numbers = 1.

62. Ⓑ

In the expression 3^7, exponent = 7

63. Ⓐ

$$\frac{1}{3^2} = \frac{1}{9}$$

64. Ⓓ

$4^{-3} = 2^{-6}$

65. Ⓐ

$4^3 \times 5^3 = 20^3$

66. Ⓐ

Rational number that does not have a reciprocal = 0.

67. Ⓓ

$$\frac{-2}{3} \times \frac{2}{3} = \frac{-4}{9}$$

68. Ⓐ

$$\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \frac{-14}{9} = \frac{1}{2}$$

69. Ⓐ

Associative

70. Ⓐ

$$(8)^{\frac{2}{3}} = 4$$

71. Ⓒ

$$(7)^{\frac{2}{5}} \times (7)^{\frac{3}{4}} = (7)^{\frac{2}{5}+\frac{3}{4}} = (7)^{\frac{23}{20}}$$

72. Ⓑ

$m = 1$

73. Ⓐ

$$\frac{5}{2}$$

74. Ⓐ

$$\frac{18}{8}$$

75. Ⓑ

$$X^{a-b} \times X^{b-c} \times X^{c-a} = X^{a-b+b-c+c-a} = X^0 = 1$$

Biology

76. Ⓑ

77. Ⓐ

78. Ⓓ

79. Ⓑ

80. Ⓒ

81. Ⓒ

Cropping season is from July to October, i.e., during monsoons.

82. Ⓑ

Seeds are sown around November and harvested between March-April.

83. Ⓐ

Crops with different nutritional requirements/inclusion of leguminous crops help to replenish the soil with the lost nutrients.

84. Ⓓ

85. Ⓒ

86. Ⓒ

87. Ⓓ

88. Ⓒ

Ploughing creates spaces for air and water retention in the soil.

89. Ⓒ

Kharif crops require a lot of water.

90. Ⓒ

Proper seed depth ensures protection from predators and adequate availability of resources. Proper seed spacing ensures adequate resources for each seed.

91. Ⓒ

92. Ⓑ

93. Ⓓ

94. Ⓓ

Hemp is a cash crop grown for its fibres.

95. Ⓑ

Breaks large chunks of soil and brings the field to a uniform level.

96. Ⓒ

97. Ⓐ

98. Ⓓ

99. Ⓓ

100. Ⓒ