Atomic Energy Central School No 4 Rawatbhata

Multiple Choice Questions Examination (November 2019-20)

MM: 120 Class X (Mathematics, Science, Social Science) Time:3hour

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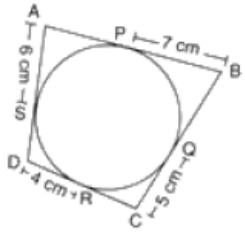
Name of student : _____Roll No._____Class Sec_____

Date: _____ Invigilator's Sign: _____

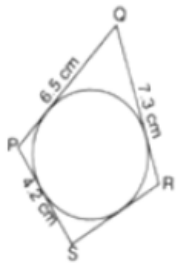
Mathematics

1. In the given figure, the perimeter of ABCD is **1**



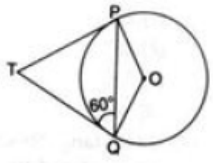
a) 44 cm b) 36 cm
c) 40 cm d) 48 cm

2. In the given figure, a circle touches all four sides of a quadrilateral PQRS, whose sides are PQ = 6.5 cm, QR = 7.3 cm, and PS = 4.2 cm, then RS is equal to **1**



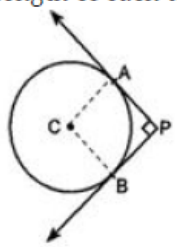
a) 7.3 cm b) 5.3 cm
c) 4.7 cm d) 5 cm

3. TP and TQ are tangents from an external point T, to a circle with centre O ∠TPQ = 60° then the measure of ∠OPQ is **1**



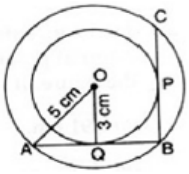
a) 60° b) 90°
c) 40° d) 30°

4. In the given figure, the pair of tangents A to a circle with centre O are perpendicular to each other and length of each tangent is 5 cm, then the radius of the circle is : **1**



a) 2.5 cm b) 5 cm
c) 7.5 cm d) 10 cm

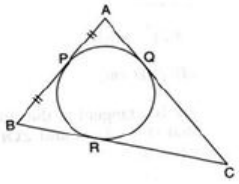
5. Two concentric circles of radii 3 cm and 5 cm are given. The length of chord BC which touches the inner circle at P is equal to **1**



a) 4 cm. b) 8 cm

c) 6 cm. d) 10 cm.

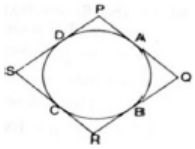
6. In the given figure, if AP = PB, then AC = **1**



a) AC = BC b) AB = BC

c) AQ = QC d) AC = AB

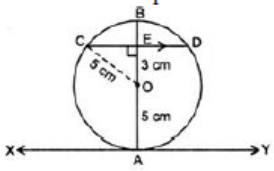
7. Quadrilateral PQRS circumscribes a circle as shown in the figure. The side of the quadrilateral which is equal to PD + QB is **1**



a) PS b) PR

c) QR d) PQ

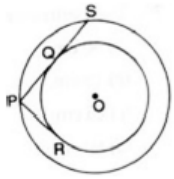
8. At one end A of a diameter AB of a circle of radius 5 cm, tangent XAY is drawn to the circle. The length of the chord CD parallel to XY and at a distance 8 cm from A is: **1**



a) 5 cm b) 6 cm

c) 8 cm d) 4 cm

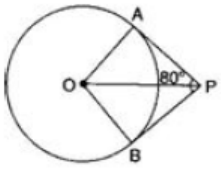
9. The given figure shows two concentric circles with centre O. PR and PQS are tangents to the inner circle from point P lying on the outer circle. If PR = 7.5 cm, then PS is equal to **1**



a) 10 cm. b) 18 cm.

c) 12 cm. d) 15 cm.

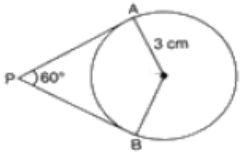
10. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of $80°$, then find $\angle POA$ **1**



a) 40° b) 100°

c) 50° d) 60°

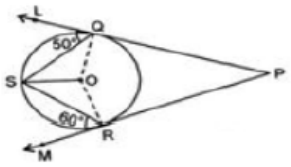
11. If two tangents inclined at 60° are drawn to circle of radius 3 cm, then length of each tangent is equal to **1**



a) $3\sqrt{3}$ b) 3 cm

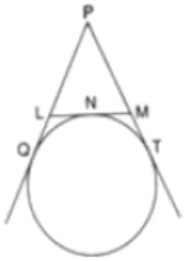
c) $2\sqrt{3}$ cm d) $3\sqrt{2}$ cm

12. In the given figure, PQL and PRM are tangents to the circle with centre O at the points Q and R respectively and S is a point on the circle such that $\angle SQL = 50^o$ and $\angle SRM = 60^o$. Then $\angle QSR$ is equal to: 1



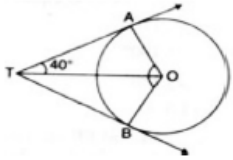
a) 50° b) 40°
c) 60° d) 70°

13. If PQ = 28 cm, then the perimeter of △PLM is 1



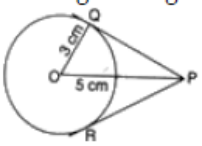
a) 48 cm b) 56 cm
c) 42 cm d) 28 cm

14. In the given, if$\angle ATO = 40^\circ$, then the measure of $\angle AOB$ is 1



a) 80° b) 100°
c) 120° d) 90°

15. In the given figure, if OQ = 3 cm, OP = 5 m, then the length of PR is 1



a) 4 cm b) 3 cm
c) 5 cm d) 6 cm

16. To divide a line segment AB in the ratio 5 : 6 draw a ray AX such that $\angle BAX$ is an acute angle, then draw a ray BY parallel to AX and the points $A_{11}, A_{12}, A_{13}, \ldots$.and $B_{11}, B_{12}, B_{13}, \ldots$.are located equal distances on ray AX and BY respectively. Then the points joined are: 1

a) A_5 and B_6 b) A_4 and B_5
c) A_5 and B_4 d) A_6 and B_5

17. To construct a triangle similar to given ΔABC with its sides of $\frac{7}{4}$ the corresponding sides of ΔABC, with a ray BX such that $\angle CBX$ is an acute angle and X is on the opposite side of A with respect to BC. The minimum number of points to be located at equal distances on ray BX is : 1

a) 4 b) 7
c) 3 d) 3

18. To divide a line segment AB in the ratio 4 : 7, a ray AX is drawn first such that $\angle BAX$ is an acute angle and then points A_1, A_2, A_3..... are located at equal distances on the ray AX and the point B is joined to: 1

a) A_{12} b) A_{10}
c) A_9 d) A_{11}

19. To draw a pair of tangents to a circle which are inclined to each other at an angle of 45^o, it is required to draw tangents at the end points of the two radii of the circle, which are inclined at an angle of 1

a) 125^o b) 135^o
c) 130^o d) 105^o

20. To divide a line segment LM in the ratio 4 : 3, a ray LX is drawn first such that $\angle MLX$ is an acute angle and then points, $L_1 L_2, L_3$, ... are located at equal distances on the ray LX and the points M is joined to: 1

a) L_2 b) L_7
c) L_4 d) L_3

21. If the point R(-2,3) divides the line segment PQ in the ratio 3:4 where the coordinates of P are (-6,7), then the coordinates of Q are: **1**

a) $(\frac{10}{3}, \frac{7}{3})$ b) $(7,8)$
c) $(4,5)$ d) $(3,8)$

22. To divide a line segment AB in the ratio 5 : 7, draw a ray AX such that is$\angle BAX$ an acute angle, then draw a ray BT || AX and mark the points and$A_1, A_2, A_3, \ldots . B_1, B_2, B_3$,....with $A_1A_2 = A_2, A_3 = \ldots = BB_1 = B_1B_2 = B_2B_3 = \ldots$ on the rays AX and BY respectively. Then, the points to be joined are : **1**

a) A_5 *to* B_2 b) A_7 *to* B_5
c) A_2 *to* B_5 d) A_5 *to* B_7

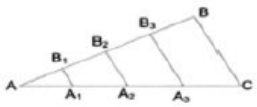
23. To divide a line segment AB in the ration 5: 6, draw a ray AX such that is$\angle BAX$ an acute angle, then draw a ray BY parallel to AX and the points A_1, A_2, A_3... and are$B_1, B_2, B_3 \ldots .$ located at equal distances on ray AX and BY, respectively. Then, the points joined are **1**

a) A_5 *and* B_4 b) A_6 *and* B_5
c) A_4 *and* B_5 d) A_5 *and* B_6

24. To divide a line segment AB in the ratio p: q (p, q are positive integers), draw a ray AX so that $\angle BAX$ is an acute angle and then mark points on ray AX at equal distances such that the minimum number of these points is: **1**

a) pq b) p + q
c) p + q – 1 d) greater of p and q

25. In the given figure, $AA_1 = A_1A_2 = A_2A_3 = A_3C$ **1**
IF B_1A_1 || CB, then A_1 divides AC in the ratio



a) 4 : 1 b) 1 : 3
c) 1/4 d) 1 : 2

26. If a line meets the circle in two distinct points, it is called **1**

a) a chord b) a radius
c) secant d) a tangent

27. The approximate value of $\pi = \frac{62832}{20000}$ is given by the great Indian mathematician **1**

a) Bhaskara b) Ramanujan
c) Aryabhatta d) Mahveera

28. If the area of a circle is equal to the area of a square, then the ratio of their perimeters is **1**

a) $2 : \pi$ b) 1 : 2
c) $\sqrt{\pi} : 2$ d) $\pi : 2$

29. The area of a circle is 2464 sq. cm, then its diameter is given by **1**

a) 28cm b) 7cm
c) 14cm d) 56cm

30. The area of a ring having 'R' as outer radius and 'r' as inner radius is **1**

a) $\pi(R + r)$ b) $\pi(R^2 - r^2)$
c) $\pi(R^2 + r^2)$ d) $\pi(R - r)$

31. If the sum of the areas of two circles with radii r_1 and r_2 is equal to the area of the circle of radius R, then **1**

a) $R^2 = {r_1}^2 - {r_2}^2$ b) $R^3 = {r_1}^2 + {r_2}^2$
c) $R^2 + {r_1}^2 = {r_2}^2$ d) $R^2 = {r_1}^2 + {r_2}^2$

32. The diameter of the circle whose area is $301.84\ cm^2$ is **1**

a) 14.2 cm b) 12.8 cm
c) 19.6 cm d) 15.6 cm

33. If the sum of the circumferences of two circles with radii $R_1 and\ R_2$ is equal to the circumference of a circle of radius R, then 1

a) $R_1 + R_2 < R$ b) $R_1 - R_2 = R$

c) $R_1 + R_2 > R$ d) $R_1 + R_2 = R$

34. If the perimeter of a circle is equal to that of a square, then the ratio of their areas is __ 1

a) 22 : 7 b) 14 : 11

c) 11 : 14 d) 7 : 22

35. If the perimeter and area of a circle are numerically equal, then the radius of the circle is 1

a) 7 units. b) 2 units

c) 4 units d) 5 units

36. If the area and circumference of a circle are numerically equal, then its radius is 1

a) π units b) 2 units

c) 2π units d) 4 units

37. The radius of the circle whose circumference is equal to the sum of the circumferences of the two circles of radii 24cm and 7cm is 1

a) 25cm b) 7cm

c) 31cm d) 24cm

38. The perimeter of a protractor is 1

a) πr b) $\pi r + 2r$

c) $\pi + r$ d) $\pi + 2r$

39. The perimeter of a semicircular protractor whose radius is 7cm is 1

a) 18cm b) 27cm

c) 72cm d) 36cm

40. A piece of wire 20cm long is bent into the form of an arc of a circle subtending an angle of 60 at its centre. The radius of the circle is 1

a) $\frac{20}{6+\pi}$ cm b) $\frac{30}{6+\pi}$ cm

c) $\frac{60}{6+\pi}$ cm d) $\frac{15}{6+\pi}$ cm

Science

41. Butanone is a four carbon compound with the functional group: 1

a) - COOH b) - CHO

c) - CO - d) - OH

42. Statement A: Valerie acid is the common name of hexane. 1

Statement B: Glycerol is added in the manufacturing of soap.

a) Statement A is true and statement B is false b) Both the statements A and B are false

c) Statement B is true and statement A is false d) Neither statement A nor statement B is false

43. Match the following with the correct response: 1

(1) Welding	(A) Ethyl alcohol
(2) A fuel in spirit lamp	(B) Ester
(3) Lime water turns milky	(C) Carbon dioxide
(4) Fruity smell	(D) Ethyne and oxygen

a) 1-D, 2-A, 3-C, 4-B b) 1-A, 2-C, 3-B, 4-D

c) 1-C, 2-B, 3-D, 4-A d) 1-B, 2-D, 3-A, 4-C

44. What is denatured spirit? 1

a) None of these b) Ethanol only

c) Methanol only d) Ethanol + Methanol (5%)

45. Hydrocarbon with molecular formula $_4H_{10}$ has: 1

a) 10 covalent bonds b) 7 covalent bonds

c) 13 covalent bonds d) 6 covalent bonds

46. Which of the following hydrocarbons undergo addition reactions? $_3H_8, C_3H_6, C_2H_5OH, CH_4, C_2H_2$ 1

a) C_3H_6, C_2H_2
b) CH_4, C_3H_8
c) C_2H_5OH, C_3H_8
d) C_3H_8, C_3H_6

47. 60and 70 are important members of which type of allotrope of carbon? 1

a) Fullerenes
b) Graphite
c) Coal
d) Diamond

48. Drinking alcohol and driving may cause serious accidents. To discourage this, police randomly lest drivers for alcohol using a breath analyzer. The breath analyzer works because: 1

a) Alcohol makes the breath dry and the machine registers moisture.
b) Alcohol makes the breath hotter which changes the machine reading.
c) Alcohol causes more saliva which the machine checks.
d) Alcohol in the breath cause a chemical change which is registered by the breath analyzer machine.

49. The formulae of two organic acids 'X' and 'Y' are $_{10}H_{21}COOH$ and $C_{19}H_{39}COOH$. Which of them exists in liquid state at room temperature? 1

a) Neither X and Y
b) Both X and Y
c) Y
d) X

50. Hardness of water is caused by: 1

a) All of these
b) $Mg(HCO_3)_2$
c) $CaCl_2$
d) $CaSO_4$

51. Statement A: Oxyacetylene flame is used for welding purposes. 1
Statement B: Ethyne reacts with HCl in the presence of $HgCl_2$ to form vinyl chloride.

a) Both the statements A and B are true.
b) Neither statement A nor statement B is true.
c) Statement B is true; Statement A is false.
d) Statement A is true; Statement B is false.

52. Activated charcoal is used in sugar industry as a: 1

a) Decolorizing agent
b) Reducing agent
c) Dehydrating agent
d) Oxidizing agent

53. A few drops of ethanoic acid are added to solid sodium bicarbonate. Which of the following observations would be observed? 1

a) Evolution of brown fumes
b) Evolution of a pungent smelling gas.
c) Brisk effervescence
d) Production of a hissing sound

54. Match the following with the correct response: 1

(1) Addition reaction	(A) Hydrogenation
(2) Substitution reaction	(B) Methanol
(3) Denaturation	(C) Carbon tetrachloride
(4) Esterification	(D) Ethyl ethanoate

a) 1-B, 2-D, 3-A, 4-C
b) 1-D, 2-A, 3-C, 4-B
c) 1-C, 2-B, 3-D, 4-A
d) 1-A, 2-C, 3-B, 4-D

55. Statement A: Ethane decolorizes bromine water whereas ethyne does not. 1
Statement B: Mixture of water and alcohol is used in radiators of vehicles in cold countries.

a) Statement B is true; Statement A is false.
b) Both - Statement A and Statement B - are true.
c) Statement A is true; Statement B is false.
d) Both - Statement A and Statement B - are false.

56. Disposable plastic plates should not be used because: 1

a) They are made of non-biodegradable material.
b) They are made of biodegradable materials.
c) They are made of toxic materials.
d) They are made of materials with light weight.

57. The driving force of an ecosystem is: **1**

a) Biomass
b) Producers
c) Solar energy
d) Carbohydrates in plants

58. Which group(s) of organisms is/are not a constituent of a food chain? **1**

A. Grass, lion, rabbit, wolf
B. Plankton, man, fish, grasshopper
C. Wolf, grass, snake, tiger
D. Frog, snake, eagle, grass, grasshopper

a) B and D
b) All of these
c) B and C
d) A and C

59. What will happen if deer is missing in the given food chain?, Grass $\rightarrow$ Deer $\rightarrow$ Tiger. **1**

a) Tiger will start eating grass.
b) The population of grass will decrease.
c) The population of tiger will decreases and the population of grass will increase.
d) The population of tiger will increase.

60. Exposure to ultraviolet radiation causes eye disease like: **1**

a) Conjunctivitis
b) Cataract
c) Short-sightedness
d) Colour blindness

61. Function of an ecosystem involves: **1**

a) Energy flow and nutrient movement
b) Energy flow only
c) Nutrient flow only
d) None of the above

62. Montreal protocol became effective in: **1**

a) 1985
b) 1987
c) 1992
d) 1989

63. Match the following with the correct response: **1**

(1) Tree	(A) Producer
(2) Grasshopper	(B) Secondary consumer
(3) Frog	(C) Herbivore
(4) Snake	(D) Secondary carnivore

a) 1-D, 2-A, 3-C, 4-B
b) 1-C, 2-B, 3-D, 4-A
c) 1-A, 2-C, 3-B, 4-D
d) 1-B, 2-D, 3-A, 4-C

64. If a grasshopper is eaten by a frog, then the energy transfer will be from: **1**

a) Primary consumer to secondary consumer
b) Secondary consumer to primary consumer
c) Producer to decomposer
d) Producer to primary consumer

65. Excessive exposure of humans to UV rays results in: **1**

A. Damage to immune system
B. Damage to lungs
C. Skin cancer
D. Peptic ulcers

a) A and C
b) B and C
c) A and B
d) A and D

66. Optical fibre is used for **1**

a) All of these
b) biomedical engineering
c) communication over long distance
d) medical applications

67. Match the following with correct response. **1**

(1) Hypermetropia
(2) Myopia
(3) Presbyopia
(4) Astigmatism

(A) Cylindrical lens
(B) Concave lens
(C) Convex lens
(D) Bifocal lens

a) 1-C, 2-B, 3-D, 4-A
b) 1-A, 2-C, 3-B, 4-D
c) 1-D, 2-A, 3-C, 4-B
d) 1-B, 2-D, 3-A, 4-C

68. Statement A : Improper functioning of rod shaped cells causes colour blindness , Statement B : The focal length of the human eye can be increased or decreased **1**

a) Statement A is true, B is false
b) Neither statement A nor statement B is true
c) Both Statement A and B are true
d) Statement B is true, A is false

69. Match the following with correct response. **1**

(1) Cataract
(2) Myopia
(3) Hyper metropia
(4) Presbyopia

(A) Old age person unable to see near objects clearly due to weakening of ciliary muscles
(B) A person can see near objects but not able to see for objects clearly
(C) Opacity of the lens
(D) A person can see far objects but not able to see near objects clearly

a) 1-B, 2-D, 3-A, 4-C
b) 1-C, 2-B, 3-D, 4-A
c) 1-A, 2-C, 3-B, 4-D
d) 1-D, 2-A, 3-C, 4-B

70. When do we say a person is colour blind? **1**

a) When person cannot see in the light
b) All of these
c) When person cannot differentiate between colours
d) When person cannot see in the dark

71. When a light passes through a prism, it splits into its component colours. This phenomenon is called. **1**

a) Reflection
b) Spectrum
c) Dispersion
d) Refraction

72. What is the observed colour of sky as seen from the moon surface? **1**

a) Black
b) Blue
c) Red
d) None of these.

73. The lateral displacement of an incident ray passing out of a rectangular glass slab **1**

a) independent of the thickness of the glass slab
b) None of these
c) is directly proportional to the thickness of the glass slab
d) inversely proportional to the thickness of the glass slab

74. The critical angle for diamond is **1**

a) 90^0
b) 180^0
c) 50^0
d) 24^0

75. Danger signals are red in colour because **1**

a) red colour is least scattered
b) red colours is most scattered
c) wavelength of red colour is less than that of other colour
d) red colour looks attractive

76. A boy uses spectacles of focal length – 50cm. Hence the defect of vision, he is suffering from- **1**

a) Far-sightedness
b) Myopia
c) Hypermetropia
d) Presbyopia.

77. Match the following with correct response. **1**

(1) Atmospheric refraction
(2) Scattering of light
(3) Dispersion
(4) Tyndall effect

(A) Twinkling of star
(B) Rainbow
(C) Red colour of rising sun
(D) White colour of clouds

a) 1-A, 2-C, 3-B, 4-D
b) 1-B, 2-D, 3-A, 4-C
c) 1-C, 2-B, 3-D, 4-A
d) 1-D, 2-A, 3-C, 4-B

78. Match the following with correct response. **1**

(1) Pupil
(2) Choroid
(3) Retina
(4) Sclerotic

(A) Iris, Pupil
(B) Cornea
(C) Ciliary muscles, lens
(D) Acts as a variable aperture in eye

a) 1-A, 2-C, 3-B, 4-D
b) 1-C, 2-B, 3-D, 4-A
c) 1-B, 2-D, 3-A, 4-C
d) 1-D, 2-A, 3-C, 4-B

79. Ability of the eye lens to adjust its focal length is called **1**

a) Accommodation
b) None of these
c) Power
d) Adjustment

80. Which of following phenomena is based on atmospheric refraction **1**

A. Sun appears to rise 2 minutes before and 2 minutes later
B. Stars seen higher than they actually are
C. Rainbow
D. Blue colour of clear sky

a) A and C
b) A and B
c) A and D
d) B and C

Social Science

81. The Vernacular Press Act of 1878 was modelled on the **1**

a) American laws
b) Irish laws
c) Australian laws
d) German laws

82. Study the picture and answer the question that follows: **1**

Which of the following option is true regarding the above picture?

a) The first book he printed was the Panchtantra
b) The first book he printed was the Accordion Book
c) The first book he printed was the Bible.
d) The first book he printed was the Diamond Sutra

83. Gutenberg printed the text in which colour? **1**

a) White
b) Red
c) Blue
d) Black

84. The dust cover or the book jacket is an innovation of which century ? **1**

a) 20th century
b) 16th century
c) 18th century
d) 19th century

85. From 1880s Naval kishore Press published numerous religious texts in vernaculars, who founded this Naval Kishore Press ? **1**

a) Ratan Naval Kishore
b) Dinesh Naval Kishore
c) Raj Naval Kishore
d) Munshi Naval Kishore

86. Richard M. Hoe belonged to which of the following country ? **1**

a) USA
b) England
c) China
d) Brazil

87. The press regulations of 1823 which were repealed by Metcafe were adopted by **1**

a) Adams
b) Canning
c) Benetick
d) Warren Hastings

88. Who wrote 'My childhood and My university **1**

a) George Eliot
b) Cardona
c) Jane Austen
d) Maxim Gorky

89. Bal Gangadhar Tilak was arrested by British government after publishing which of the following poems ? **1**

a) Resistance
b) Bande Matram
c) Maratha
d) Shivaji's Utterences

90. Where was the world's first newspaper published? **1**

a) India
b) paris
c) Rome
d) China

91. Sebastien Mercier was a/an **1**

a) Comedian
b) Editor
c) Novelist
d) Artist

92. Penny chapbooks were first printed from which of the following country ? **1**

a) England
b) Canada
c) India
d) China

93. Who were Bronte sisters? **1**

a) They were novelists
b) They were philosophers
c) They were historians
d) They were Journalists

94. Shamsul Akhbar was published in which language ? **1**

a) Sanskrit
b) Persian
c) Urdu
d) Arabic

95. Study the picture and answer the question that follows: **1**

Which of the following option is correct regarding the picture?

a) It is a page from the oldest Japanese book - Diamond Sutra.
b) It is a page from the Ninety Five Theses.
c) It is a page from the Panchtantra book
d) It is a page from the traditional Chinese 'accordion book'

96. Grimm brothers published which of the following **1**

a) Novels
b) Folk tales
c) Ballads
d) Newspapers

97. Who among the following is known as liberator of the Indian press **1**

a) Dalhousie
b) Mayo
c) Hastings
d) Charles Metcafe

98. Press came to be made out of metal in **1**

a) Eighteenth century
b) Fifteenth century
c) Seventeenth century
d) Sixteenth century

99. Which among the following is an autobiography of Rashundari Devi 1

a) Amar Jawan
b) Amar zindagi
c) AmarJyoti
d) Amar Jiban

100. 'Chhote Aur Bade Ka Sawal' was written by 1

a) Tilak
b) MK Gandhi
c) Kashibaba
d) Ambedkar

101. The _____ was the world's first mass-produced car. 1

a) H Model Ford
b) M Model Ford
c) O Model Ford
d) T Model Ford

102. Give one word for : They link national currencies for purposes of international trade. 1

a) Floating rate
b) Flexible rate
c) Exchange rate
d) Fixed rate

103. Abolition of _____ meant that food could be imported at much cheaper rate than at what it could be produced in Britain. 1

a) Corn Laws
b) Zamindari System
c) Permanent Settlement system
d) Land to the Tiller Act

104. What method was used by the Portuguese and the Spanish for the colonisation of America? 1

a) Guns and firearms
b) Germs and Virus
c) Army and Military
d) Firepower and bombs

105. Indentured Indian labourers were often referred to as '_____' in Trinidad. 1

a) Poors
b) Dalits
c) Coolies
d) Porters

106. Which Conference was held in July 1944 at Bretton Woods? 1

a) Earth Conference
b) United Nations Monetary and Financial Conference
c) United nation Development programme Conference
d) United Nations Financial and Monetary Conference

107. In which century trade flourished and markets expanded? 1

a) In the late sixth century
b) In the late nineteenth century
c) In the late eighteenth century
d) In the late seventeenth century

108. The pre-modern world shrank greatly in which century? 1

a) Sixteenth
b) Tenth
c) Nineteenth
d) Sixth

109. Economists has identify three types of flows within international economic exchanges. Which of the given is not a part of that flow? 1

a) The flow of trade
b) The movement of capital
c) The flow of labour
d) The flow of technology

110. Which of the following country was not exporting food grain to Britain? 1

a) Russia
b) China
c) America
d) Australia

111. The US ____ no longer commanded confidence as the world's principal currency. 1

a) Euro
b) Dollar
c) Peso
d) Pound

112. Read the given statement with respect to important influencing factor that lead to the recovery after the Second World War. Tick the correct factor. 1

i. The emergence of the US as the dominant economic, political and military power in the west.
ii. Transformation of the Soviet Union from an agrarian economy into a world power.
iii. The dominance of the Soviet Union

a) i only
b) Only ii
c) i, ii and iii
d) ii and iii

113. Tariff is tax imposed on a country's _____ from the rest of the world. 1

a) Per Capita Income
b) Imports
c) Exports
d) National Income

114. Income from the Indian market was utilised by Britain to pay '_____' for its officials who were posted in India. 1

a) War equipment
b) Home charges
c) Loans
d) Import duties

115. John Maynard Keynes-the famous economist thought that India _____ during the Great Depression of 1929 promoted global economic recovery. 1

a) Gold exports
b) Spices imports
c) Opium exports
d) B. Gold imports

116. _____ were not equipped to cope with the challenge of poverty and lack of development in the former colonies. 1

i. International Bank for Reconstruction and Development
ii. Consumer Welfare Fund
iii. International Monetary Fund

Choose the correct option.

a) i and iii
b) i, ii and iii
c) i and ii
d) ii only

117. What are MNCs? 1

a) Mega National Companies
b) Medium National Corporation
c) Multi National Corporations
d) Multi Number Companies

118. An industrial society based on _____ cannot be sustained without mass consumption. 1

a) Total production
b) Production by masses
c) Mass production
d) Gross production

119. The peasants of Ireland became dependent on _____. 1

a) Potato
b) Indigo
c) Coffee
d) Tea

120. _____ and other asian countries became attractive destination for investment by foreign MNC's 1

a) America
b) China
c) Russia
d) Australia

Solution

Class 10 - Mathematics

MULTIPLE CHOICE QUESTION EXAMINATION

Section A

1. (a)
   44 cm

   Explanation:
   Since tangents from an external point to a circle are equal in length.
   ∴ AS = AP = 6 cm and AB = 6 + 7 = 13 cm
   PB = BQ = 7 cm and BC = 7 + 5 = 12 cm
   CQ = CR = 5 cm and CD = 5 + 4 = 9 cm
   RD = SD = 4 cm and AD = 4 + 6 = 10 cm
   Therefore, perimeter of quadrilateral ABCD = 13 + 12 + 9 + 10 = 44 cm

2. (d)
   5 cm

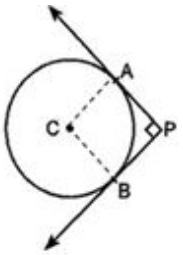
   Explanation:
   :Let point of contact of RS be A,
   point of contact of QR be B,
   point of contact of PQ be C
   and point of contact of PS be D.
   Also let AS = x and AR = y
   Now, AS = SD = x [Tangents from an external point]
   ⇒PD = 4.2 - x
   But PD = PC = 4.2 - x
   And QC = 6.5 – PC = 6.5 - 4.2 + x = 2.3 + x .....(i)
   Now, again, AR = BR = y [Tangents from an external point]
   ⇒QB = 7.3 - y
   But QB = QC [Tangents from an external point]
   ∴ 7.3 - y = 2.3 + x ⇒ x + y =5
   ⇒AS + AR = 5 cm

3. (d)
   30°

   Explanation:
   Here ∠QPT = 60v [Angles opposite to equal sides]
   And ∠PTQ = 180° - (60° + 60°) = 60° [Angle sum property of a triangle]
   ∴∠POQ = 180° - 60° = 120°
   Let ∠OPQ = ∠OQP = x [Angles opposite to equal sides (Radii)]
   ∴ In triangle OPQ,
   ∠POQ + x + x = 180°
   ⇒120° + 2x = 180°
   ⇒2x = 60°
   ⇒x = 30°
   Therefore, ∠OPQ = 30°

4. (b)
   5 cm

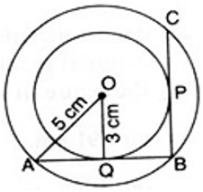
   Explanation:



Construction: Joined OA and OB.
Here OA⊥ AP
and OB⊥BP
and PA ⊥PB
Also AP = PB
Therefore, APBO is a square.
⇒ AP = OA = OB = 5 cm

5. (b)
8 cm

Explanation:



Construction: Joined OP.
In right angled triangle AOQ,
AQ = $\sqrt{(5)^2-(3)^2} = \sqrt{25-9} = \sqrt{16}$ = 4 cm
Since perpendicular from centre bisect opposite sides.
∴AQ = QB = 4 cm
Also QB = PB = 4 cm [Tangents to a circle]
And PB = PC = 4 cm [OP ⊥ BC]
∴ BC = PB + PC = 4 + 4 = 8 cm

6. (a)
AC = BC

Explanation:
Since Tangents from an external point to a circle are equal.
∴ PB = BR .....(i)
PA = AQ .....(ii)
CQ = CR .....(iii)
Adding eq. (i) and (iii), we get
PB + CQ = BR + CR
⇒ AP + CQ = BC [Given: PB = AP]
⇒AQ + CQ = BC [From eq. (ii) AP = AQ]
⇒ AC = BC

7. (d)
PQ

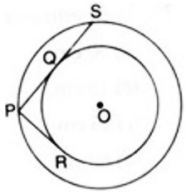
Explanation:
PD + QB = PA + QA [Tangents from an external point to a circle are equal]
⇒ PD + QB = PQ

8. (c)
8 cm

Explanation:
In right angled triangle COE,
$OC^2 = OE^2 + CE^2$
$\Rightarrow (5)^2 = (3)^2 + CE^2 \Rightarrow CE^2 = 25 - 9 = 16$
$\Rightarrow$CE = 4 cm
Since, perpendicular from centre of a circle to the chord bisects the chord.
$\therefore$ CD = CE + ED = 4 + 4 = 8 cm

9. (d)
15 cm.

Explanation:



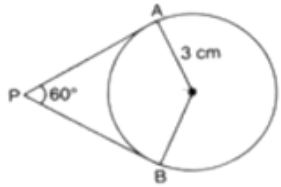
Construction: Joined OP and OS. Draw OQ $\perp$ PS
Here PR = PQ = 7.5 cm [Tangents to a circle from an external point]
Now, in triangles OPQ and OSQ,
$\angle$PQO = $\angle$SQO = 90° [Line segment is perpendicular from centre to point of contact]
OQ = OQ [Common]
OP = OS [Radii]
$\therefore \Delta$ OPQ $\cong \Delta$ OSQ [SAS congruency]
$\therefore$ PQ = QS [By CPCT]
Therefore, PS = PQ + QS
= 7.5 + 7.5 = 15 cm

10. (c)
50°

Explanation:
Here $\angle$OAP = 90°
And $\angle \mathrm{OPA} = \frac{1}{2}\angle \mathrm{BPA}$ [Centre lies on the bisector of the angle between the two tangents]
$\Rightarrow \angle \mathrm{OPA} = \frac{1}{2} \times 80^\circ = 40^\circ$
Now, in triangle OPA,
$\angle \mathrm{OAP} + \angle \mathrm{OPA} + \angle \mathrm{POA} = 180^\circ$
$\Rightarrow$90° + 40° + $\angle$POA = 180°
$\Rightarrow \angle$POA = 50°

11. (a)
$3\sqrt{3}$

Explanation:
Let O be the centre. Construction: Joined OP.



Since OP bisects $\angle$P, therefore, $\angle \mathrm{APO} = \angle \mathrm{OPB} = 30^\circ$ And $\angle \mathrm{OAP} = 90^\circ$
$\therefore \tan 30^\circ = \frac{\mathrm{OA}}{\mathrm{AP}} \Rightarrow \frac{1}{\sqrt{3}} = \frac{3}{\mathrm{AP}}$
$\Rightarrow \mathrm{AP} = 3\sqrt{3}$ cm Since each tangent from an external point to a circle are equal.
Therefore, PA = PB = $3\sqrt{3}$ cm

12. (d)
70°

Explanation:
Here ∠OQS = ∠OQL - ∠SQL = 90° - 50° = 40°
And ∠ORS = ∠ORM - ∠SQM 90° - 60° = 30° Since OS = OQ [Radii]
⇒∠OSQ = ∠OQS = 40° [Angles opposite to equal sides] Again, since OS = OR [Radii]
⇒∠OSR = ∠ORS = 30° [Angles opposite to equal sides]
∴ ∠QSR = ∠OSQ+∠OSR = 40° + 30° = 70°

13. (b)
56 cm

Explanation:
We know that, PQ = $\frac{1}{2}$(Perimeter of △PLM)
⇒ 28 = $\frac{1}{2}$ (Perimeter of △PLM)
⇒(Perimeter of △PLM) = 28 × 2 = 56 cm

14. (b)
100°

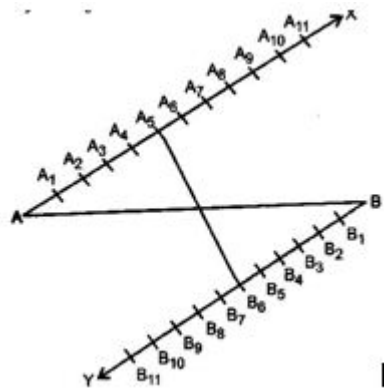
Explanation:
Since OT bisects the ∠T.
∴ ∠OTB = 40°
and ∠ATB = 40° + 40° = 80°
∴ ∠AOB = 180° - 80° = 100°

15. (a)
4 cm

Explanation:
Here ∠Q = 90° [Angle between tangent and radius through the point of contact]
Now, in right angled triangle OPQ,
$OP^2 = OQ^2 + PQ^2$
$\Rightarrow (5)^2 = (3)^2 + PQ^2$
$\Rightarrow PQ^2 = 25 - 9 = 16$
⇒ PQ = 4 cm
But PQ = PR [Tangents from one point to a circle are equal]
Therefore, PR = 4 cm

16. (a)
A_5 and B_6

Explanation:



According to the question, the point joined are A_5 and B_6. The point where A_5B_6 intersects the given line is

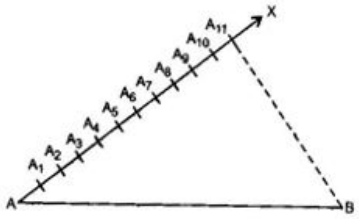
the required point.

17. (b)
7

Explanation:
When numerator is greater than the denominator, the number of arcs should be drawn larger of m and n. Therefore, according to the question, the minimum number of points to be located at equal distances on ray BX is 7.

18. (d)
A_{11}

Explanation:
According to the question, point B is joined to A11.



19. (b)
135^o

Explanation:
According to the question, the angle between radii is $180^\circ - 45^\circ = 135^\circ$

20. (b)
L_7

Explanation:
To divide a line segment AB in the ratio m: n, a ray AX is drawn, such that ∠BAX is an acute angle and the points A1, A2, A3, ……., Am, ……. An are located at equal distances on the ray AX and then the point B is joined to An.
Therefore, according to the question, the point M is joined to L7M.

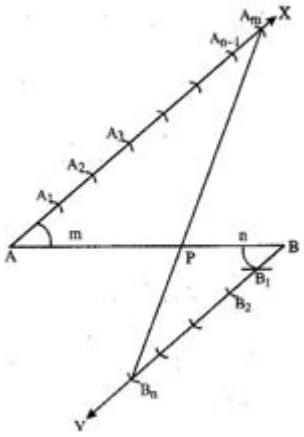
21. (a)
$(\frac{10}{3}, \frac{7}{3})$

Explanation:
Let us suppose,P$(-6, 7)$,Q$(x, y)$is divided by R$(-2, 3)$ in the ratio of $3 : 4$
Then,
$(\frac{-6\times4+3\times x}{3+4}) = -2$
Or,$-24 + 3x = -14$
Or,$3x = 10$
Or,$x = \frac{10}{3}$
$(\frac{7\times4+3\times y}{3+4}) = 3$
Or,$28 + 3y = 21$
Or,$3y = 7$
Or,$y = \frac{7}{3}$
Then the co ordinate of Q$(\frac{10}{3}, \frac{7}{3})$

22. (d)
$A_5 \ to \ B_7$

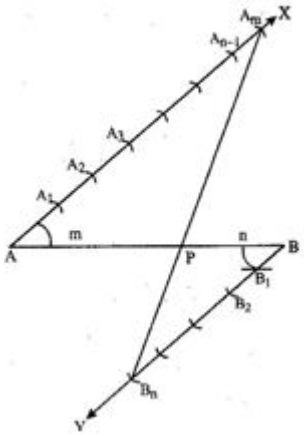
Explanation:

According to the question, the points to be joined are A_5 to B_7 because if we have to divide a line segment AB in the ratio m:n, then we draw rays AX and BY and mark the points $A_1, A_2, \ldots, A_m$ and $B_1, B_2, \ldots, B_n$ on rays AX and BY respectively. Then we join the point $A_m$to B_n



23. (b)
A_6 and B_5

Explanation:
According to the question, the points joined are A_6 to B_5. Because if we have to divide a line segment AB in the ratio m : n, then we draw rays AX and BY and mark the points $A_1, A_2, \ldots\ldots, A_m$ and $B_1, B_2, \ldots\ldots, B_n$ on rays AX and BY respectively. Then we join the point A_m to B_n.



24. (b)
p + q

Explanation:
According to the question, the minimum number of those points which are to be marked should be (Numerator + Denominator) i.e., p + q

25. (c)
1/4

Explanation:
In the figure, $AA_1 = A_1A_2 = A_2A_3 = A_3C$
=1/4

26. (c)
secant

Explanation:
A secant line, also simply called a secant, is a line meet two points in a circle.

27. (c)

Aryabhatta

Explanation:
Aryabhata said that circumference of a circle with a diameter of 20000 is (4+100) $\times$8 +62000= 62832. And we know that the value of π is the ratio of the circumference to the diameter, so in this case $\frac{62832}{20000}$, which is incredibly 3.1416

28. (c)
$\sqrt{\pi} : 2$

Explanation:
Let the radius of the circle be r and the side of the square be a.
Then according to the question, $\pi r^2 = a^2 \Rightarrow a = r\sqrt{\pi}$ .....(i)
Now, Ratio of their perimeters = $\frac{2\pi r}{4a}$
$\Rightarrow$ Ratio of their perimeters = $\frac{\pi r}{2a}$ = $\frac{\pi r}{2r\sqrt{\pi}}$ = $\frac{\sqrt{\pi}}{2}$
Ratio of their perimeters = $\sqrt{\pi} : 2$

29. (d)
56cm

Explanation:
Given: Area of circle = 2464 sq. cm
$\Rightarrow \pi r^2 = 2464$
$\Rightarrow r^2 = \frac{2464}{22} \times 7$ = 784
$\Rightarrow r = 28$ cm
$\therefore$ Diameter = 2$\times$ radius = 2 $\times$ 28 = 56 cm

30. (b)
$\pi(R^2 - r^2)$

Explanation:

The area of a ring having 'R' as outer radius and 'r' as inner radius is $\pi \mathrm{R}^2 - \pi r^2 = \pi\left(\mathrm{R}^2 - r^2\right)$

31. (d)
$R^2 = {r_1}^2 + {r_2}^2$

Explanation:
According to the question,
$\pi \mathrm{R}^2 = \pi r_1^2 + \pi r_2^2$
= $\pi\left(r_1^2 + r_2^2\right)$
$\Rightarrow \mathrm{R}^2 = r_1^2 + r_2^2$

32. (c)
19.6 cm

Explanation:
Let diameter of the circle be d cm.
$\therefore$ Area = $\pi r^2 = \pi\left(\frac{d}{2}\right)^2$
$\Rightarrow 301.84 = \frac{22}{7} \times \frac{d^2}{4}$
$\Rightarrow d^2 = \frac{301.84 \times 4 \times 7}{22}$

$\Rightarrow d^2 = 384.16$
$\Rightarrow d = 19.6$ cm

33. (d)
$R_1 + R_2 = R$

Explanation:
Let required radius be R.
Then according to the question,
$2\pi \mathrm{R}_1 + 2\pi \mathrm{R}_2 = 2\pi \mathrm{R}$
$\Rightarrow 2\pi \left(\mathrm{R}_1 + \mathrm{R}_2\right) = 2\pi \mathrm{R}$
$\Rightarrow \mathrm{R}_1 + \mathrm{R}_2 = \mathrm{R}$

34. (b)
14 : 11

Explanation:
Let the radius of the circle be r and side of the square be a. Then, according to question,
$2\pi r = 4a \Rightarrow a = \frac{2\pi r}{4} = \frac{\pi r}{2}$
Now, ratio of their areas,
$\frac{\pi r^2}{\left(\frac{\pi r}{2}\right)^2}$
= $\frac{\pi r^2 \times 4}{\pi^2 r^2}$
= $\frac{14}{11}$
$\Rightarrow \pi r^2 : a^2 = 14 : 11$

35. (b)
2 units

Explanation:
Let the radius of the circle be r units.
Then, the perimeter of the circle = $2\pi r$ units
The area of the circle = πr^2 sq. units
According to the question,
$2\pi r = \pi r^2$
$\implies r = 2\, units$

36. (b)
2 units

Explanation:
Let the radius of the circle is r units.
$\therefore$ Area of the circle = Circumference of the circle
$\Rightarrow \pi r^2 = 2\pi r$
$\Rightarrow r^2 = 2r$
$\Rightarrow$ r$\times$r=2r
$\Rightarrow r = 2$ units

37. (c)
31cm

Explanation:
Let required radius be R.
Then according to the question,
$2\pi \mathrm{R} = 2\pi r_1 + 2\pi r_2$
= $2\pi \left(r_1 + r_2\right)$

$\Rightarrow \mathrm{R} = r_1 + r_2$
$\Rightarrow \mathrm{R} = 24 + 7 = 31\mathrm{cm}$

38. (b)
$\pi r\ +\ 2r$

Explanation:
Let radius of the protractor be r $\therefore$ Perimeter of protractor = Perimeter of semicircle + Diameter of semicircle
$\Rightarrow$ Perimeter of protractor = $\pi r + 2r$

39. (d)
36cm

Explanation:
Perimeter of circular protractor = $\pi r + 2r$ = $\frac{22}{7} \times 7 + 2 \times 7$= 36 cm

40. (c)
$\frac{60}{6+\pi}$ cm

Explanation:
Given: Length of arc + 2 $\times$ Radius = 20 cm
$\Rightarrow \frac{\theta}{360^\circ} \times 2\pi r + 2r = 20$
$\Rightarrow \frac{60^\circ}{360^\circ} \times 2\pi r + 2r = 20$
$\Rightarrow \frac{\pi r}{3} + 2r = 20$
$\Rightarrow r\left(\frac{\pi}{3} + 2\right) = 20$
$\Rightarrow r\left(\frac{6+\pi}{3}\right) = 20$
$\Rightarrow r = \frac{60}{6+\pi}$ cm

Solution

Class 10 - Science

Multiple Choice Question Examination

Section A

41. (c)
- CO -

Explanation:
Butanone ($CH_3COCH_2CH_3$) is the second member of ketones. It is a four carbon compound with ketone functional group (- CO -). The ketone functional group has two free valencies which are satisfied by one methyl ($-CH_3$) group and one ethyl ($-C_2H_5$) group.

42. (b)
Both the statements A and B are false

Explanation:
Valeric acid is another name for pentanoic acid, **Soaps** are sodium or potassium salts of long chain fatty acids. When triglycerides in fat/oil react with aqueous NaOH or KOH, they are converted into **soap** and glycerol.

43. (a)
1-D, 2-A, 3-C, 4-B

Explanation:
The oxyacetylene welding process uses a combination of ethyne (C_2H_2) and oxygen gas to provide a high temperature flame. It is commonly used to permanently join mild steel. . Alcohol meant for industrial purposes (fuel for spirit lamps) is made unfit for human consumption by adding small amounts (about 5%) of methanol to alcohol. The mixture is known as denatured spirit or denatured alcohol. Carbon dioxide turns lime water turns milky due to the formation of insoluble calcium carbonate. Esters have a fruity smell and are used in perfumes and cosmetics due to their characteristic odour.

44. (d)
Ethanol + Methanol (5%)

Explanation:
Alcohol meant for industrial purposes is made unfit for human consumption by adding small amounts (about 5%) of methanol to ethanol. The mixture is known as **denatured spirit** or **denatured alcohol**. Addition of small amount of copper sulphate is added to impart a blue colour to denatured spirit so that it can be identified easily.

45. (c)
13 covalent bonds

Explanation:
Butane C_4H_{10} has 3 C-C covalent bonds and 10 C-H covalent bonds. Thus, it has 13 covalent bonds.

46. (a)
C_3H_6, C_2H_2

Explanation:
Unsaturated hydrocarbons undergo addition reactions. Hence, saturated hydrocarbons like C_3H_8 and CH_4 (propane and methane) will not undergo addition reactions. Propene (C_3H_6) and Ethyne (C_2H_2) will undergo addition reactions.

47. (a)

Fullerenes

Explanation:
Carbon can exist in three solid forms (Diamond, Graphite, Fullerenes) called allotropes. $C_{60}$and C_{70} are members of Fullerenes (Allotropes of carbon). Buckminsterfullerene contains cluster of 60 carbon atoms joined together to form spherical molecules.

48. (d)
Alcohol in the breath cause a chemical change which is registered by the breath analyzer machine.

Explanation:
A breath-analyzer is a device for estimating blood alcohol content (BAC). Breath-analyzers do not measure blood alcohol content or concentration directly. The direct measurement requires the analysis of a blood sample. Instead, they estimate the BAC indirectly by measuring the amount of alcohol in one's breath. Alcohol in the breath causes a chemical change. This chemical change is registered by the breath-analyzer machine.

49. (d)
X

Explanation:
$C_{10}H_{21}COOH$ **:** Hendecanoic acid (also known as undecanoic acid, undecylenic acid and undecylic acid) is a naturally occurring carboxylic acid. It has a melting point in the range 28 - 31 ^{o}C. It is a low melting solid.
$C_{19}H_{39}COOH$ **:** Arachidic acid or eicosanoic acid is a white crystalline solid at room temperature (25 ^{o}C). It has a melting point in the range 74 - 76 ^{o}C

50. (a)
All of these

Explanation:
Hardness of water is caused by magnesium and calcium salts. Calcium and magnesium dissolved in water are the two most common minerals that make water hard. Temporary hardness is a type of water hardness caused by the presence of dissolved bicarbonate minerals (calcium bicarbonate and magnesium bicarbonate).

51. (a)
Both the statements A and B are true.

Explanation:
Oxyacetylene flame is used for welding purposes. The oxyacetylene welding process uses a combination of oxygen and acetylene (C_2H_2) gas to provide a high temperature flame. It is commonly used to join mild steel permanently.
Ethyne (C_2H_2) reacts with HCl in the presence of $HgCl_2$ to from vinyl chloride or chloro ethane H_2C=CHCl. This colorless compound is an important industrial chemical. It is chiefly used to produce polyvinyl chloride (PVC).

52. (a)
Decolorizing agent

Explanation:
Activated charcoal is activated carbon. It is a form of carbon processed to have small, low-volume pores that increases the surface area available for adsorption or chemical reactions. Activated charcoal is used as a **decolorizing agent** in the sugar industry.

53. (c)
Brisk effervescence

Explanation:
A brisk effervescence of carbon dioxide gas will be observed when **ethanoic acid** reacts with solid **sodium bicarbonate**. This reaction is used is a test for ethanoic acid.
$CH_3COOH + NAHCO_3 \rightarrow CH_3COONa + H_2O + CO_2$

54. (d)
1-A, 2-C, 3-B, 4-D

Explanation:
Hydrogenation is an addition reaction. The addition of hydrogen to an unsaturated hydrocarbon to obtain a saturated hydrocarbon is called hydrogenation. Carbon tetrachloride is a product of a substitution reaction - a characteristic property of saturated hydrocarbons. Alcohol meant for industrial purposes is made unfit for human consumption by adding small amounts (about 5%) of methanol to alcohol. The mixture is known as denatured spirit or denatured alcohol. Ethyl ethanoate is a product of esterification.
$CH_3COOH + C_2H_5OH \rightarrow CH_3COOC_2H_5 + H_2O$

55. (a)
Statement B is true; Statement A is false.

Explanation:
Bromine water test is a test for unsaturated hydrocarbons. Ethane undergoes addition reaction and decolorizes bromine water. Similarly, ethyne also decolorizes bromine water.
Mixture of water and alcohol is used in radiators of vehicles in cold countries. Alcohol is used for antifreeze mixture. Antifreeze is an additive which lowers the freezing point of a water-based liquid.

56. (a)
They are made of non-biodegradable material.

Explanation:
Disposable plastic plates should not be used because they are made of non-biodegradable material. Non-biodegradable substances may be inert, are not broken down and persist in the environment for a long time. They may thus cause harm to the various members of the ecosystem.

57. (c)
Solar energy

Explanation:
The driving force of an ecosystem is solar energy. A food chain in an ecosystem always starts with photosynthesis. The autotrophs or the producers are at the first trophic level. They fix up the solar energy and make it available for heterotrophs or the consumers.

58. (c)
B and C

Explanation:
Organisms in groups B and C do not make up a food chain. A food chain is a series of organisms in order of who eats whom. In B, grasshopper is out of place. In D, nobody out of wolf, snake or tiger eats grass.

59. (c)
The population of tiger will decreases and the population of grass will increase.

Explanation:
If deer is missing from the given food chain, the population of tiger will decrease and the growth of grass will increase. A missing link in a food chain will create an imbalance in the ecosystem.

60. (b)
Cataract

Explanation:
Exposure to ultraviolet (UV) radiation can cause eye diseases like the cataract. A cataract is a clouding of the lens in the eye which leads to a decrease in vision.

61. (a)
Energy flow and nutrient movement

Explanation:
Different materials in an ecosystem are cycled in separate biogeochemical cycles. Essential nutrients like nitrogen, carbon, oxygen and water are changed from one form to another in these biogeochemical cycles. Producers in an ecosystem fix up the solar energy and make it available for the next trophic levels.

62. (d)
1989

Explanation:
The **Montreal Protocol** became effective in 1989. The **Montreal Protocol** is a protocol to the Vienna Convention for the Protection of the Ozone Layer. It is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion.

63. (c)
1-A, 2-C, 3-B, 4-D

Explanation:
A tree is a producer (autotroph). A grasshopper is a herbivore (primary consumer). A frog is secondary consumer.

(1) Tree	(A) Producer
(2) Grasshopper	(C) Herbivore
(3) Frog	(B) Secondary consumer
(4) Snake	(D) Secondary carnivore

64. (a)
Primary consumer to secondary consumer

Explanation:
If a grasshopper is eaten by a frog, then the energy transfer will be from a primary consumer to a secondary consumer. A grasshopper is a primary consumer. A frog is a secondary consumer.

65. (a)
A and C

Explanation:
Excessive exposure of humans to UV (ultraviolet) rays results in damage to the immune system. Exposure to UV radiation is also a risk factor for most skin cancers.

66. (a)
All of these

Explanation:
Applications of optical fiber include:
1. Communication: Telephone transmissoin method usese fiber-optic cables. Optical fibres transmit energy in the form of light pulses.
2. Medical uses: Optical fibres are well suited for medical use. They can be made in extremely thin, flexible stands for insertion into the blood vessels, lungs, and other hollow parts of the body. Optical fibers are used in a number of instruments that enable doctors to view internal body parts without having to perform surgery.

3. Simple uses: The simplest application of optical fibers is the trnsmission of light to locations otherwise hard to reach.

67. (a)
1-C, 2-B, 3-D, 4-A

Explanation:
For correction of **hypermetropic eye** or long-sighted eye, a convex lens is used.
For correction of **myopic eye** or short-sighted eye, a concave lens is used.
For correction of **presbyopia**, a bifocal lens (upper position consisting of concave lens and lower portion consisting of convex lens) is used.
Astigmatism can be corrected by using cylindrical lenses.

68. (d)
Statement B is true, A is false

Explanation:
Colour blindness is said to occur when a person cannot differentiate between colours although his vision may otherwise be normal. Its causes are genetic and till date it has no cure. Colour blindness has no connection with improper functioning of rod shaped cells.
Ciliary muscle helps to change the curvature of eye lens and hence increases or decreases its focal length so that we can see the object clearly, placed at different position.

69. (b)
1-C, 2-B, 3-D, 4-A

Explanation:
Cataract: The image can not be seen distinctly because eye lens become milky and cloudy.
Myopia (Near Sightedness): A person can see nearby object clearly, but cannot see distant object distinctly. Image formed in front of the retina.
Hypermetropia (Far-Sightedness): A person cannot see nearby object clearly, but can see distant object distinctly. Image formed at a point behind the retina.
Presbyopia: As we become old, the power of accommodation of the eye usually decreases (due to weakening of cilliary muscles), the near point gradually recedes away. This defect is called Presbyopia. Person may suffer from both myopia and hypermetropia.

70. (c)
When person cannot differentiate between colours

Explanation:
Colour blindness is said to occur when a person cannot differentiate between colours although his vision may otherwise be normal. Causes of colour blindness are genetic and till date it has no cure.

71. (c)
Dispersion

Explanation:
Dispersion is the phenomena of splitting of white light into its constituent seven colours (VIBGYOR) on passing through a glass prism.

72. (a)
Black

Explanation:
The sky appears blue due to scattering of the blue colour by the earth's atmosphere. In moon there is no atmosphere hence nothing to scatter light. Thus, the sky appears dark as seen from the moon surface.

73. (c)
is directly proportional to the thickness of the glass slab

Explanation:
The lateral displacement of an incident ray passing out of a rectangular glass slab is directly proportional to the thickness of glass slab, angle of incidence, and refractive index however it is inversely proportional to the wavelength of incident light.

74. (d)
24^0

Explanation:
The critical angle for diamond is equal to 24.4° (approx. 24^0), so that once light gets into diamond, it is very likely to be totally reflected internally. By cutting the diamond suitably, multiple internal reflections can be made to occur.
As, the sine of the critical angle is equal to the reciprocal of the refractive index of that material i.e.

$\sin\ c\ =\ \frac{1}{\mu}\ or\ c\ =\ \sin^{-1}\ \left(\frac{1}{\mu}\right)$

$c\ =\ \sin^{-1}\ \left(\frac{1}{2.42}\right)\ [refractive\ index\ of\ diamond\ =\ 2.42]$

$c\ =\ \sin^{-1}\ (0.413)$

$c\ =\ 24.4^0$

75. (a)
red colour is least scattered

Explanation:
Red colour scattered the least when strikes by the small particle of fog and smoke because it has the maximum wavelength (visible spectrum). Hence at large distance also, we can see the red colour clearly.

76. (b)
Myopia

Explanation:
By convention, focal length of concave lens is taken as negative. For correction of myopic eye or near-sighted eye, a concave lens is used.

77. (a)
1-A, 2-C, 3-B, 4-D

Explanation:
Twinkling of stars is due to atmospheric refraction.
The **rainbow** is a formed due to the dispersion and total internal reflection of sunlight by the tiny water droplet, present in atmosphere.
The **rising sun appears red** because the sun is near horizon, and therefore the sunlight has to travel larger distance in atmosphere which scatters away most of the blue light (shorter wavelength) by the atmospheric particles.
The phenomenon of scattering of light by the colloidal particles is known as Tyndall Effect. Light of all wave lengths are scattered equally by the clouds and hence **clouds appears white**.

78. (d)
1-D, 2-A, 3-C, 4-B

Explanation:
Pupil is the black opening (**variable aperture**) which regulates and controls the amount of light entering the eye.
Choroid is the middle layer. It is modified at the front to form the **Iris.** Iris contains radial and circular muscles. Iris regulates the size of the **pupil**.
Retina is the innermost layer. **Ciliary muscles** helps to change the curvature of **eye lens** and hence changes its focal length so that a sharp image is formed on the retina of an object placed at different

position.
Scleroid is the outermost part of the eye. The front transparent part through which the light enters the eye is called **cornea**.

79. (a)
Accommodation

Explanation:
The ability of the eye to focus both near and distant objects, by adjusting the focal length of the eye lens, is called the accommodation of the eye.

80. (b)
A and B

Explanation:
Both of these phenomena are due to atmospheric refraction. The temperature and density of different layer of atmosphere keeps varying. When the light enters the earth's atmosphere it undergoes refraction continuously, due to changing refractive index i.e. light travels from rarer to denser medium and hence It bends towards the normal successively.

Solution

Class 10 - Social Science

MULTIPLE CHOICE QUESTION EXAMINATION

Section A

81. (b) Irish laws
Explanation:
In 1878'vernacular press act was passed,modelled on the irish press laws. It provided the govt with extensive rights to censor reports and editorials in the vernacular press.

82. (c)
The first book he printed was the Bible.

Explanation:
It is a Portrait of Johann Gutenberg. The first book he printed was the Bible.

83. (d) Black
Explanation:
Gutenberg printed the text in black, leaving spaces where the colour could be filled in later.

84. (a) 20th century
Explanation:
The dust cover or the book jacket is the detachable outer cover, usually made of paper and printed with text and illustrations. It is an innovation of 20th century.

85. (d) Munshi Naval Kishore
Explanation:
The Naval Kishore Press (NKP) was founded in Lucknow in 1858 by Munshi Naval Kishore and grew in the following decades to one of India’s most important publishing houses.

86. (a) USA
Explanation:
Richard M. Hoe, the inventor of power driven cylinderical press was the citizen of USA. The main feature of his press was that it was capable of printing 8000 sheets per hour.

87. (a) Adams
Explanation:
Adams imposed restrictions on the press in the year 1923.The regulations of 1923 were more stringent than any that had been in force earlier. These restrictions were chiefly against Indian language newspapers.

88. (d) Maxim Gorky
Explanation:
My childhood and My university was written by Maxim Gorky. This book provide glimpses of the struggles of the poor people against grim obstacles.

89. (d) Shivaji's Utterences
Explanation:
Bal Gangadhar Tilak wrote a poem namely Shivaji's Utterences. This poem was published by Tilak in Kesari and for this he was arrested by the British Government.

90. (c) Rome
Explanation:
The first newspaper was published in Rome nemely Acta Diurna.It was published around 59 BC.

91. (c) Novelist
Explanation:
Mercier was a novelist who declared that printing press is the most powerful engine of progress.

92. (a) England
Explanation:

Penny Chapbooks were printed from England. These were carried by petty pedlars known as chapmen and sold for a penny so that even the poor could buy them.

93. (a) They were novelists
Explanation:
The best known novelists in the nineteenth century were Brounte sisters. Their writings became important in defining a new type of women.

94. (b) Persian
Explanation:
Shamsul Akhbar , a persian newspaper was published from the year 1822 along with another persian newspaper Jam-i-Jahan Nama.

95. (a)
It is a page from the oldest Japanese book - Diamond Sutra.

Explanation:
The oldest Japanese book, printed in AD 868, is the Buddhist Diamond Sutra, containing six sheets of text and woodcut illustrations.

96. (b) Folk tales
Explanation:
About two-hundred years ago, Grimm brothers published a collection of folk tales. The Grimms didn't write these stories, they collected tales that had been handed down from generation to generation.

97. (d) Charles Metcafe
Explanation:
Metcafe repealed the 1823 regulations with the press act of 1835 that is why he earned the epithet of liberator of the Indian press.

98. (a) Eighteenth century
Explanation:
By the late eighteenth century, the press came to be made out of metal. Through the nineteenth century, there were a series of further innovations in printing technology.

99. (d) Amar Jiban
Explanation:
Amar Jiban, published in 1876, is the name of Rashundari Devi's autobiography and is the first autobiography written by an Indian woman.

100. (c)
Kashibaba

Explanation:
Kashibaba, a millworker wrote and published 'Chhote Aur Bade Ka Sawal' in the year 1938 to show the links between caste and class exploitation.

101. (d)
T Model Ford

Explanation:
The T Model Ford was the world’s first mass-produced car.

102. (c) Exchange rate
Explanation:
Exchange rates: They link national currencies for purposes of international trade.

103. (a) Corn Laws
Explanation:
Abolition of Corn Laws meant that food could be imported at much cheaper rate than at what it could be produced in Britain. British farm produce was unable to compete with cheaper imports.

104. (b) Germs and Virus
Explanation:
The germs were used as a powerful weapon by the Portuguese and the Spanish for the colonisation of America. When the Europeans reached there, they carried the germs of small pox along with them. The disease wiped off the whole communities in certain parts of America. And thus, the Europeans could easily get control of the Americas.

105. (c) Coolies
Explanation:
Coolie: Unskilled 'native' labourers. Indentured Indian labourers were often referred to as 'coolies' in Trinidad.

106. (b) United Nations Monetary and Financial Conference
Explanation:
United Nations Monetary and Financial Conference was held in July 1944 at Bretton Woods in New Hampshire, USA.

107. (b) In the late nineteenth century
Explanation:
Trade flourished and markets expanded in the late nineteenth century. But this was not only a period of expanding trade and increased prosperity. It is important to realise that there was a darker side to this process.

108. (a) Sixteenth
Explanation:
The pre-modern world shrank greatly in the sixteenth century after European sailors found a sea route to Asia and also successfully crossed the western ocean to America

109. (d)
The flow of technology

Explanation:

i. The first is the flow of trade which in the nineteenth century referred largely to trade in goods.
ii. The second is the flow of labour – the migration of people in search of employment.
iii. The third is the movement of capital for short-term or long-term investments over long distances.

110. (b) China
Explanation:
Countries which were exporting food grain to Britain:Russia,America and Australia

111. (b) Dollar
Explanation:
The US dollar now no longer commanded confidence as the world's principal currency.The dollar could not maintain its value in relation to gold. Thus the system of fixed exchange rate collapsed and the new system of floating exchange rate began.

112. (c)
i, ii and iii

Explanation:
The recovery after the Second World War was influenced by two important factors:
First :

a. The emergence of the US as the dominant economic, political and military power in the west.
b. Transformation of the Soviet Union from an agrarian economy into a world power.

Second : The second was the dominance of the Soviet Union.

113. (b) Imports
Explanation:
Tariff: Tax imposed on a country's imports from the rest of the world. Tariffs are levied at the point of entry, i.e., at the border or the airport.

114. (b) Home charges
Explanation:
Income from the Indian market was utilised by Britain to serve its other colonies and also to pay 'home charges' for its officials who were posted in India.

115. (a) Gold exports
Explanation:
Explanation : John Maynard Keynes-the famous economist thought that India gold exports during the Great Depression of 1929 promoted global economic recover.

116. (a) i and iii
Explanation:
The IMF and the International Bank for Reconstruction and Development (World Bank) were designed to meet the financial needs of the industrial countries. They were not equipped to cope with the challenge of poverty and lack of development in the former colonies.

117. (c) Multi National Corporations
Explanation:
Multinational corporations (MNCs) are large companies that operate in several countries at the same time.

118. (c) Mass production
Explanation:
An industrial society based on mass production cannot be sustained without mass consumption.

119. (a) Potato
Explanation:
The peasants of Ireland became so dependent on potato that when disease destroyed the potato crop in the mid-1840s, hundreds of thousands died due to starvation. This famine is known as Irish Famine.

120. (b)
China

Explanation:
China became attractive destinations for investment: This is because of the low-cost structure of the Chinese economy, most importantly its low wages.
Wages were relatively low in countries like China. Thus they became destinations for investment by foreign
MNCs competing to capture world markets.