ATOMIC ENERGY CENTRAL SCHOOL NO.4

RAWATBHATA

Class 09 - Mathematics

MULTIPLE CHOICE QUESTION EXAMINATION

Maximum Marks: 40 **Time Allowed: 1 hour**

General Instructions:

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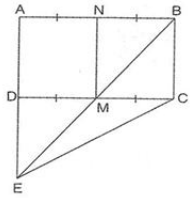
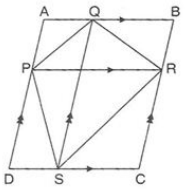
Section A

1. M and N are the mid-points of sides DC and AB respectively, of a rectangle ABCD. If $ar\ (rectangle\ ABCD) = 48\ cm^2$, then $ar\ (\triangle EMC)$ is **1**



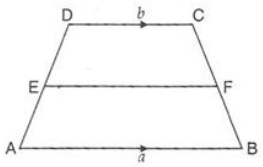
a) $48\ cm^2$. b) $36\ cm^2$.
c) $24\ cm^2$. d) $12\ cm^2$.

2. ABCD is a parallelogram formed by drawing lines parallel to diagonals of quadrilateral PQRS through its vertices. If $ar\ (quad\ PQRS) = 15\ cm^2$, then $ar\ (\|\ ABCD)$is **1**



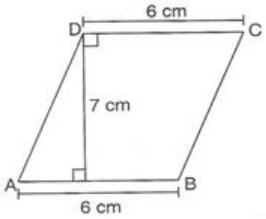
a) $25\ cm^2$. b) $30\ cm^2$.
c) $40\ cm^2$. d) $40\ cm^2$.

3. ABCD is a trapezium with parallel sides AB = a cm and DC = b cm. E and F are the mid-points of the non-parallel sides. The ratio of ar (ABFE) to ar (EFCD) is **1**



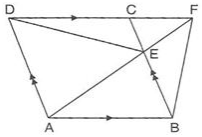
a) (a + 3b) : (3a + b). b) a : b
c) (2a + b) : (3a + b). d) (3a + b) : (a + 3b).

4. In the given figure, the area of quadrilateral ABCD is **1**



a) $42\ cm^2$. b) $13\ cm^2$.
c) $24\ cm^2$. d) $21\ cm^2$.

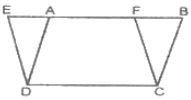
5. ABCD is a parallelogram. Through A a line AEF is drawn to meet DC produced at F. If $ar(\triangle DCE) = 13\ sq$ units then $ar\ (\triangle BEF)$ is **1**



a) 13 sq. units. b) 26 sq units.

c) 19.5 sq units. d) 6.5 sq units.

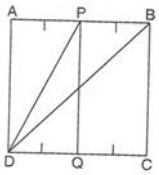
6. In the figure, ABCD is a parallelogram and EFCD is rectangle. Now which of the following is correct option? **1**



a) $ar\ (\|\ ADCF)\ =\ ar\ (rect.\ ABCD)$ b) $ar\ (\|\ ADCF)\ =\ ar\ (rect.\ EFCD)$

c) none of these. d) $ar\ (\|\ ABCD)\ =\ ar\ (rect.\ EFCD)$

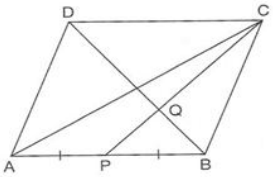
7. ABCD is a square. P and Q are mid-point of AB and DC respectively. If AB = 8 cm, then $ar\ (\triangle BPD)$ is **1**



a) $16\ cm^2$. b) $24\ cm^2$.

c) $32\ cm^2$. d) $18cm^2$.

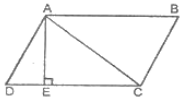
8. ABCD is a parallelogram. P is the mid-point of AB. BD and CP intersect at Q,. CQ : QP = 3 : 1. If $ar(\triangle PBQ) = 10\,cm^2$, then $ar\ (\|\ \ ABCD)$ is **1**



a) $90\ cm^2$. b) $160\ cm^2$.

c) $130\ cm^2$. d) $120\ cm^2$.

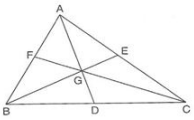
9. ABCD is a parallelogram one of whose diagonals is AC. Then, which of the following is true? **1**



a) none of these b) $ar\ (\triangle ABC) < ar(\triangle ADC)$

c) $ar\ (\triangle ADC) > ar(\triangle CBA)$ d) $ar\ (\triangle ADC) = ar(\triangle CBA)$

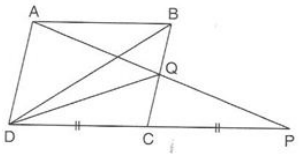
10. Medians of $\triangle ABC$ intersects at G. If $ar\ (\triangle ABC) = 27\ cm^2$, then $ar\ (\triangle BGC)$ is **1**



a) $12\ cm^2$. b) $9\ cm^2$.

c) $18\,cm^2$. d) $6\ cm^2$.

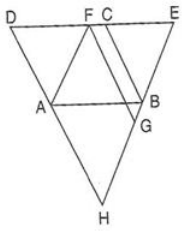
11. ABCD is a parallelogram in which DC is produced to P such that DC = CP. AP intersects BC at Q. If $ar\ (\triangle BQD) = 3\ cm^2$, then $ar(\|\ \ ABCD)$ is **1**



a) $9\ cm^2$. b) $6\ cm^2$.

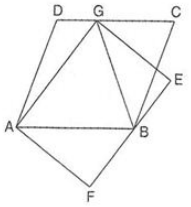
c) $15\ cm^2$. d) $12\ cm^{2\cdot}$.

12. In the given figure If $ar\ (\|\ \ ABEF)\ =\ ar(\|\ \ ABCD) = 50\ cm^2$, AFGH is a parallelogram and points E, B, G and H are collinear points, then $ar\ (\|\ \ AFGH)$ is **1**



a) $75\ cm^2$.
b) $50\ cm^2$.
c) $100\ cm^2$.
d) $25\ cm^2$.

13. In given figure ABCD and AGEF are parallelograms. If $ar(\|\ \ AGEF) = 27\ cm^2$, then $ar\ (\triangle ADG) + ar(\triangle GCB)$ is **1**

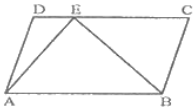


a) $13.5\ cm^2$.
b) $18\ cm^2$.
c) $27\ cm^2$.
d) $9\ cm^2$.

14. The figure obtained by joining the mid-points of the adjacent sides of a rectangle of sides 8 cm and 6 cm is : **1**

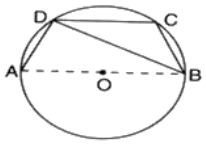
a) a rectangle of area 24 cm^2
b) a trapezium of area 24 cm^2
c) a rhombus of area 24 cm^2
d) a square of area 25 cm^2

15. In the figure if area of parallelogram ABCD is $30\ cm^2$, then $ar\ (ADE) + ar(BCE)$is equal to **1**



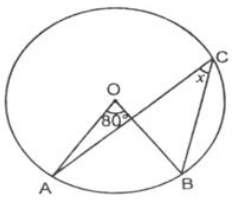
a) $20\ cm^2$.
b) $30\ cm^2$.
c) $15\ cm^2$.
d) $25\ cm^2$.

16. In the given figure, if $\angle ADC = 118^o$, then the measure of $\angle BDC$ is **1**



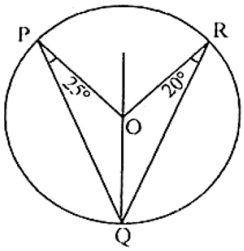
a) 32^o
b) 38^o
c) 28^o
d) 22^o

17. In the figure, O is the centre of eh circle and $\angle AOB = 80^o$. The value of x is : **1**



a) 60^o
b) 30^o
c) 160^o
d) 40^o

18. In the figure, O is the centre of the circle. If $\angle OPQ = 25^o$ and $\angle ORQ = 20^o$, then the measures of $\angle POR$ and $\angle PQR$ are respectively : **1**



a) None of these
b) $120^o, 60^o$

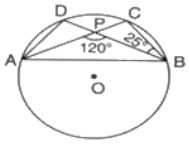
c) $90^o, 45^o$ d) $60^o, 30^o$

19. The region between chord and either of the arc is called **1**

a) a semicircle b) a sector

c) a quarter circle d) a segment

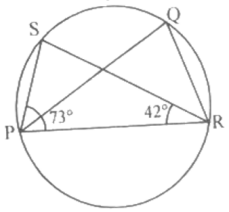
20. O is the centre of the given circle. If $\angle APB = 120^o$ and $\angle DBC = 25^o$, then the measure of $\angle ADB$ is equal to **1**



a) 60^o b) 100^o

c) 95^o d) 120^o

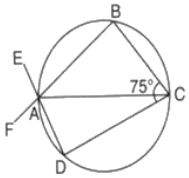
21. In the figure, if ∠SPR = 73°, ∠SRP = 42° then ∠PQR is equal to : **1**



a) 74° b) 76°

c) 70° d) 65°

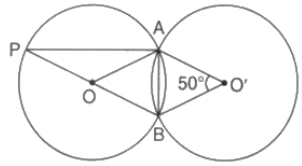
22. In the given figure, AC is a diameter of the given circle and $\angle BCD = 75^o$. Then, $\angle EAF - \angle ABC$ is equal to **1**



a) 20^o b) 15^o

c) 25^o d) 10^o

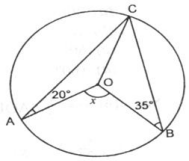
23. The given figure shows two congruent circles with centre O and O' intersecting at A and B. If $\angle AO'B = 50^o$, then the measure of $\angle APB$ is **1**



a) 40^o b) 25^o

c) 50^o d) 45^o

24. In the given figure, a circle is centred at O. The value of x is : **1**



a) 110^o b) 55^o

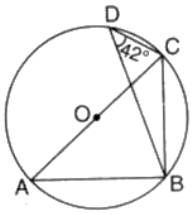
c) 125^o d) 70^o

25. Angle inscribed in a semicircle is : **1**

a) 60^o b) 120^o

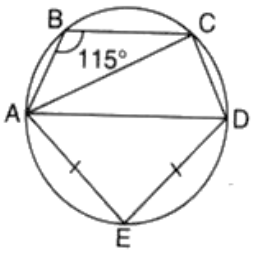
c) 75^o d) 90^o

26. In the given circle, O is the centre and $\angle BDC = 42^o$. Then, $\angle ACB$ is equal to **1**



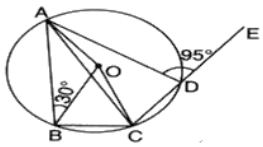
a) 52^o b) 42^o
c) 48^o d) 58^o

27. In the given figure, AD is the diameter of the circle and AE = DE. If $\angle ABC = 115^o$, then the measure of $\angle CAE$ is **1**



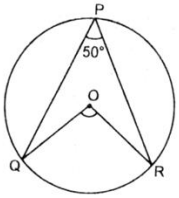
a) 60^o b) 80^o
c) 70^o d) 90^o

28. In the given figure, ABCD is a quadrilateral inscribed in circle with centre O. CD is produced to E. If $\angle ADE = 95^o$ and $\angle OBA = 30^o$, then $\angle OAC$ is equal to **1**



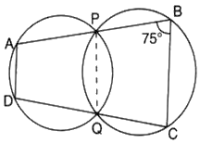
a) 20^o b) 5^o
c) 10^o d) 15^o

29. In the given figure, O is the centre of the circle. If $\angle QPR$ is 50^o, then $\angle QOR$ is : **1**



a) 100^o b) 130^o
c) 40^o d) 50^o

30. The given figure shows two intersecting circles. If $\angle ABC = 75^o$, then the measure of $\angle PAD$ is **1**



a) 75^o b) 105^o
c) 150^o d) 125^o

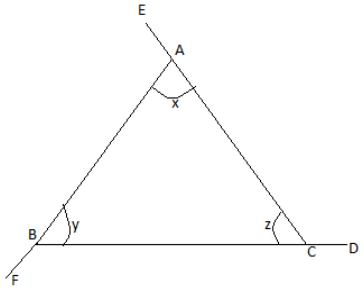
31. If two parallel lines are intersected by a transversal, the bisectors of the interior angles form a _____. **1**

a) rectangle b) square
c) rhombus d) parallelogram

32. The construction of a $\triangle ABC$, given that BC = 4 cm, $\angle C = 60^0$ is possible when difference of AB and AC is equal to **1**

a) 4.5 cm b) 5 cm
c) 4.2 cm d) 3.5 cm.

33. The sides BC, CA and AB of $\triangle$ABC are produced in order to form exterior angles $\angle$ACD, $\angle$BAE and $\angle$CBF. $\angle$ACD + $\angle$BAE + $\angle$CBF is_____. **1**



a) 540° b) 180°
c) 360° d) 270°

34. An angle greater than 180^0 but less than 360^0 is called _____. **1**

a) right angle b) an acute angle
c) an obtuse angle d) reflex angle

35. The construction of a $\triangle ABC$ with AB = 4 cm and $\angle A = 60^0$ is not possible when difference of BC and AC is equal to____. **1**

a) 3.5 cm b) 4.5 cm
c) 3 cm d) 2.5 cm

36. The construction of a $\triangle ABC$, given that $BC = 3\ cm,\ \angle C = 60^0$, is possible when difference of AB and AC is equal to_____. **1**

a) 3.2 cm b) 4 cm
c) 3.1 cm d) 2.8 cm

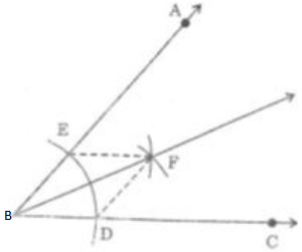
37. What is the supplementary angle of 108^0 ? **1**

a) 72^0 b) 70.5^0
c) 72.5^0 d) 71^0

38. The construction of a $\triangle ABC$, given that BC = 3 cm, $\angle C = 30^0$ is possible when sum of AB and AC is equal to _____. **1**

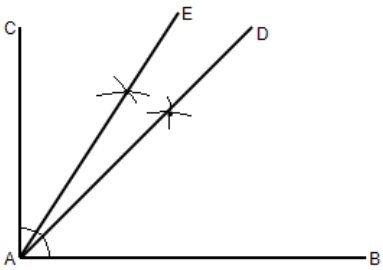
a) 3 cm b) 2 cm
c) 2.8 cm d) 3.2 cm

39. In the construction of the bisector of a given angle, as shown in the figure below $\triangle BEF \cong \triangle BDF$ by which congruence criterion? **1**



a) SAS b) SSS
c) RHS d) AAS

40. In figure, ∠BAC = 90°. ∠BAD = ∠CAD and ∠DAE = ∠CAE. Here, ∠BAE = _____. **1**



a) none of these. b) $67\frac{1}{2}^\circ$
c) 75° d) 65°

ATOMIC ENERGY CENTRAL SCHOOL NO.4

RAWATBHATA

Class 09 - Science

Multiple Choice Questions Examination

Maximum Marks: 40 **Time Allowed: 1 hour and 30 minutes**

General Instructions:

All uestions are compulsory.

Section A

41. Which is not true about H_2SO_4? **1**
(a) It is composed of 2 Hydrogen, 1 Sulphur and 4 Oxygen atoms.
(b) It relative molecular mass is 98.
(c) It is composed of one molecule of H_2, one atom of S and two molecules of O_2
(d) Its relative molecular mass is 108.

a) All of these
b) (c) and (d) are correct.
c) (b) and (c) are correct
d) (a), (b) and (c) are correct

42. Which of the following is the correct definition of a mole? **1**
(a) It is equal to the gram atomic mass of the substance.
(b) It contains 6.022×10^{20}atoms of a given substance.
(c) It is equal to gram molecular mass of the substance.
(d) It contains 6.022×10^{23}molecules of a given substance.

a) (b) and (c) are correct
b) (a) and (b) are correct
c) (a), (c) and (d) are correct
d) All of these

43. The colour of copper oxide is **1**

a) blue
b) white
c) black
d) brown

44. SO is **1**

a) acidic
b) amphoteric
c) basic
d) neutral

45. Which of the following elements are present in Quick lime? **1**

a) Sodium, Hydrogen, Oxygen
b) Calcium chloride
c) Calcium, Bromine
d) Calcium, Oxygen

46. When you heat a magnesium ribbon on a burner, it burns with a blinding white light and some residue is left after burning. This residue appears to be like : **1**

a) powdered salt
b) sand
c) charcoal ash
d) lamp black

47. Which of the following two statement(s) is/are true? **1**
Statement A : Mole is quite often known as chemist's dozen.
Statement B : The mass of one-twelfth (1/12) of the mass of one atom of Carbon is taken as 1 u.

a) Statement A
b) Statement B
c) Neither Statement A nor Statement B.
d) Both the statements - A and B

48. Calculate the number of moles in 17 g of hydrogen peroxide$\mathrm{H_2O_2}$) **1**

a) 2 mole
b) 1 mole
c) 1/2 mole
d) 3 mole

49. Identify the correct statement: **1**

a) The law of constant proportions was stated by A Lavoisier.
b) The molecules of noble gas elements are diatomic in nature.
c) Dalton was the first to state that the smallest indivisible portion of matter is an atom.
d) The law of conservation of mass was given by Louis Proust.

50. Which has more molecules - 4 g of methane or 11 g of CO_2 ? **1**

a) Both have the same number of moles.
b) CO_2
c) Information not sufficient
d) Methane

51. The distinguishing characteristic that places animals into the phylum chordate is **1**

a) head with a pointed mouth
b) post anal tail
c) presence of locomotory organs
d) bilaterally symmetrical body

52. Which of the following is common among plants and animals? **1**

a) Both are prokaryotic
b) Both are autotrophic
c) Both are eukaryotic
d) Both are heterotrophic

53. In which group of animals, coelom is filled with blood? **1**

a) Arthropoda
b) Nematoda
c) Echinodermata
d) Annelida

54. Chloroplast in Spirogyra is **1**

a) Cup-shaped
b) Spirally arranged and ribbon-shaped with pyrenoids
c) Circular
d) Spirally arrange without pyrenoids

55. In taxonomic hierarchy, family comes between **1**

a) Class and Order
b) Division and Class
c) Genus and Species
d) Order and Genus

56. The skeleton of starfish is made up of **1**

a) potassium carbonate
b) potassium chloride
c) calcium phosphate
d) calcium carbonate

57. Amoeba, paramecium are examples of organism from which kingdom? **1**

a) Monera
b) Fungi
c) Protista
d) Plantae

58. Which one is a true fish? **1**

a) Starfish
b) Silverfish
c) Dogfish
d) Jellyfish

59. Which of the following groups of animals are all invertebrates? **1**

a) Snail, fish and bacterium
b) Earthworm, insect and crab
c) Insect, fish and frog
d) Shark, snake and bird

60. Which of the following is a monocot? **1**

a) Mango
b) Mustard
c) Carrot
d) Wheat

61. Hyphae are found in **1**

a) Both Algae and Fungi
b) Lichens
c) Fungi
d) Algae

62. The feature that is not a characteristic of protochordata **1**

a) Bilateral symmetry and coelom
b) Jointed legs
c) Presence of notochord
d) Presence of circulatory system

63. A plant is diploid and well adapted to extreme conditions. They grow bearing sporophylls in compact structures called cones. Identify the group to which it belongs : **1**

a) Pteridophyta
b) Bryophyta
c) Angiopserms
d) Gymnosperms

64. One of the following is not an Annelid **1**

a) Urchins
b) Nereis
c) Earthwork
d) Leech

65. Air bladder is present in _____ **1**

a) Snake
b) Cartilaginous Fishes
c) Bony fishes
d) Toad

66. A car is accelerated on a leveled road and attains a velocity 4 times of its initial velocity. In this process the potential energy of the car **1**

a) does not change
b) becomes 16 times that of initial
c) becomes twice to that of initial
d) becomes 4 times that of initial

67. Two cars A and B approaching each other with momentum of 50 kg m/s and 25 kg m/s respectively, stick to each other after collision. The momentum after the collision is **1**

a) 75 kg m/s
b) In the direction of B
c) In the direction of A
d) 50 kg m/s

68. The work done by a force on a body will be positive if the **1**

a) body moves perpendicular to the direction of motion
b) body moves opposite to the direction of the applied force
c) body moves along the direction of the applied force
d) body does not move

69. When the speed of a moving object is doubled, its **1**

a) kinetic energy increases 4 times
b) kinetic energy is doubled
c) acceleration is doubled
d) weight is doubled

70. A ball dropped from height of 10m. if the energy of the ball reduces by 40% after striking the ground, how much high can the bounce back? (g= $10m/s^2$) **1**

a) 6 m
b) 5 m
c) 0 m
d) 3 m

71. The heart does 1.5 J of work in each heartbeat. How many times per minute does it beat if its power is 2watt? **1**

a) 80 times
b) 60 times
c) 8 times
d) 10 times

72. No work is done when: **1**

a) textbook is lowered diagonally at a constant velocity
b) there is no component of force, parallel to the direction of motion
c) a box is pushed along horizontal floor
d) a nail is hammered into a wooden box

73. An electric bulb of 60 W burns for 5 hours a day. The cost of electricity involved in a month of 30 days at Rs. 3.00 per unit is (in Rs.) **1**

a) 2.70
b) 2700
c) 270
d) 27

74. Work done is said to be zero if the applied force is _____ to the direction of displacement. **1**

a) perpendicular
b) power
c) joule
d) mass

75. To compare the pressure exerted by the solid iron cuboid, a student took two cuboids having the same dimension and same nature of material. After performing the experiment with both the cuboids, she found **1**

a) $p_1 = 2p_2$
b) $p_2 = 3p_1$
c) $p_1 = p_2$
d) $p_2 = 2p_1$

76. To observe and compare the pressure exerted by solid iron cuboid, a student marked all the faces of cuboid from 1 to 6. After doing the experiment with all faces of cuboid, he observed that **1**

a) adjacent faces of cuboid exerted the same pressure
b) all the faces of cuboid exerted same pressure on the sand

c) opposite parallel faces of cuboid exerted unequal pressure on the sand

d) opposite parallel faces of the cuboid exerted same pressure on the sand

77. Kinetic energy depends upon the _____ and the square of _____ of a body. **1**

a) newton, metre

b) mass, velocity

c) velocity, newton

d) mass, metre

78. A horse exert a force of 200N to pull the cart. If the horse cart system moves with velocity 36km/h on the level road., then find the power of horse in term of horse power (1hp=746W) **1**

a) 2.5 h.p.

b) 3.68 h.p

c) 2.68 h.p

d) 1.68 h.p

79. An iron sphere of mass 30 kg has the same diameter as an aluminium sphere whose mass is 10.5 kg. The spheres are dropped simultaneously from a cliff. When they are 10 m from the ground, they have the same **1**

a) kinetic energy

b) potential energy

c) acceleration

d) momentum

80. An object of mass 5 kg falls from a height of 5 m above the ground. The loss of potential energy of the mass is **1**

a) 245 J

b) 25 J

c) 50 J

d) 2.5 kJ

ATOMIC ENERGY CENTRAL SCHOOL NO.4

RAWATBHATA

Class 09 - Social Science

MULTIPLE CHOICE QUESTION EXAMINATION

Maximum Marks: 40 **Time Allowed: 1 hour**

General Instructions:

...

Section A

81. Consider a case of a small village near Karur town in Tamil Nadu. The village is facing a very poor condition. There are unmetalled roads in the village. Along with this, the village has no access to pure drinking water. There is no clinic or a school in the village. Even people have to live without electricity. Subsequently, in order to curb such conditions, the central government assisted the state government and launched a scheme. After the implementation of the scheme, villagers have access to basic services such as primary health, primary education, rural shelter, rural drinking water, and rural electrification. Give the name of the scheme that lead the village to prosperity. **1**

a) Mahatma Gandhi National Rural Employment Guarantee Act.
b) Swarnajayanti Gram Swarozgar Yojana
c) Antyodaya Anna Yozana
d) Pradhan Mantri Gramodaya Yozana

82. Which of the following social group has not seen a decline in poverty ratio ? **1**

a) Scheduled Caste
b) Backward Class
c) Urban Casual Laborers
d) Scheduled Tribes

83. Which of the following state has the lowest poverty rate? **1**

a) Madhya Pradesh
b) Jammu and Kashmir
c) Goa
d) Orissa

84. Thirty-three year old Ram Saran works as a daily-wage laborer in a wheat flour mill in a rural area of Ranchi in Jharkhand. He manages to earn around Rs 1,500 a month when he finds employment, which is not often. The money is not enough to sustain his family of six- that includes his wife and four children aged between 12 years to six months. Ram Saran is unhealthy and not able to work efficiently as his intake of accepted average calorie requirement is very low. With respect to the above case analyze what is the standard accepted average calorie requirement. **1**

a) 2100 per month
b) 2400 per month
c) 2100 per day
d) 2400 per day

85. When was NREGA passed ? **1**

a) September 2005
b) October 2005
c) November 2005
d) August 2005

86. In which of the following state land reform measures have helped in reducing poverty ? **1**

a) Haryana
b) Tamil Nadu
c) West Bengal
d) Punjab

87. Which programme of the government provides compensation to unemployed if he fail to get 100 days employment for a year ? **1**

a) SGSY
b) PMGY
c) NREGA
d) NGWP

88. In which region of the world poverty has risen up ? **1**

a) None of these
b) Europe
c) Sub Saharan Africa
d) Asia

89. Village Palampur is situated about 10 kilometres west of Surat. In a village, males of families work as **1**

labourers while the females are responsible for household jobs. The income of all the families in the village is meagre. Subsequently, the programme was launched by the government. Under this programme, a collective group was formed by 15 women. Each member of the group deposits Rs. 100 as savings every month. To meet their needs, members can take small loans from the group itself or through a mix of bank credit and government subsidy. Based on the above case, name the programme by which government organised women into self-help groups.

a) Prime Minister Rozgar Yozana
b) Swarnajayanti Gram Swarozgar Yojana
c) Rural Employment Generation Programme
d) Pradhan Mantri Gramodaya Yozana

90. Shyamlal is a farmer and is engaged in the cultivation of sugarcane. When the sugarcane is harvested all his production of sugarcane is transported to Ramlal who is a factory owner. In the factory, the sugarcane is converted into jaggery and transported to market for the sale to consumers. Based on the above case, identify the sector in which Ramlal is engaged. **1**

a) All of these
b) Primary sector
c) Secondary sector
d) Tertiary sector

91. Which of the following Indian state has maximum number of people living below poverty line ? **1**

a) Uttar Pradesh
b) Bihar
c) Madhya Pradesh
d) Odisha

92. What is MNREGA ? **1**

a) Marginal National Rural Employment Guarantee Act.
b) Mahatama Gandhi National Rural Employment Guarantee Action.
c) Marginal Natural Rural Employment Guarantee Act.
d) Mahatama Gandhi National Rural Employment Guarantee Act.

93. What is NSSO ? **1**

a) Nation's Sample Survey Organisation
b) National Sarva Siksha Organisation
c) National Sample Survey Organisation
d) National Statistics Survey Organisation

94. In which of the following countries did poverty actually rise from 1981 to 2001 ? **1**

a) Asia
b) Sub Saharan Africa
c) Australia
d) Latin America

95. Which of the following group is not vulnerable group to poverty ? **1**

a) Scheduled Tribes
b) Urban casual labourers
c) Rural agriculturalist
d) Upper Caste

96. Devilal and his family live in a slum area. It has very poor surroundings with no basic facilities. No rich family resides in such an area. Devilal is bound to live only in a poor surrounding with other poor people and denied from enjoying social equality of better-off people in better surroundings. Find out what situation they are facing there? **1**

a) Vulnerable exclusion
b) Political exclusion
c) Vulnerability
d) Social exclusion

97. Which of the following are the components of human poverty ? (i) Education (ii) Health (iii) Shelter (iv) Equality **1**

a) Only (ii) and (iii)
b) Only (ii) and (iv)
c) All of these
d) Only (i) and (ii)

98. In which of the following country poverty has decreased substantially ? **1**

a) Bangladesh
b) China
c) Russia
d) India

99. Which of the following state has focused more on human resource development ? **1**

a) Madhya Pradesh
b) Kerala
c) Uttar Pradesh
d) Orissa

100. What is average poverty ratio in India ? **1**

a) 26%
b) 27%
c) 25%
d) 28%

101. Which one of the following bioreserve of India is not included in the world network of bioreserve ? **1**

a) Dihang – Dibang
b) Manas
c) Gulf of Mannar
d) Nanda Devi

102. Which of the following animal is not found in montane forests ? **1**

a) Kashmir stag
b) Yak
c) One-horned rhinoceros
d) Leopard

103. Which of the following regions of India has thorn forests ? **1**

a) North –West parts of the country.
b) East –West parts of India.
c) South –West parts of India.
d) Andaman and Nicobar Islands.

104. Read the feature and identify the vegetation : A. The trees reach great height upto 60m or even above. B. There is no definite time for trees to shed their leaves. **1**

a) Mediterranean type of vegetation
b) Mangrove forests
c) Tropical deciduous forests
d) Tropical Evergreen forests

105. Which of the following tree predominates in the Himalayas between 1500 m and 3000 m ? **1**

a) Mosses and lichens
b) Pine and deodar
c) Junipers and Mangrove
d) Oasks and Chestnuts

106. Which of the following has not been included in the world network of Biosphere reserves ? **1**

a) Sunderbans
b) Nanda Devi
c) Nilgiris
d) Manas

107. A region receives annual rainfall between 200 cm to 70 cm. Which of the following is the expected type of vegetation in the region ? **1**

a) Thorn forests
b) Tropical Deciduous forests
c) Tropical Evergreen forests
d) Tidal forests

108. Match the following : **1**

1	2
A. The Thorn Forests.	1. Heavy rainfall more than 200 cm.
B. Mangrove Forests	2. 200 cm to 70 cm or rainfall.
C. Tropical Evergreen forests	3. Ganga – Brahmputra delta.
D. Tropical Deciduous forests	4. North – West parts of India.

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

109. Which of the following is most wide spread vegetation of India ? **1**

a) Tropical Evergreen forests
b) Mediterranean type of vegetation
c) Tropical Deciduous forests
d) Mangrove forests

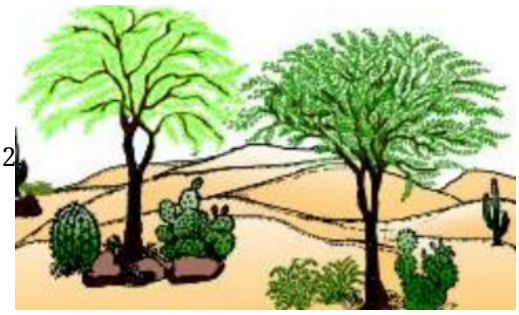
110. **1**

What type of vegetation is shown in the given picture?

a) Tropical Deciduous Forests
b) Montane Forests
c) Mangrove Forests
d) Tropical Thorn Forests and Scrubs

111. Which is the famous animal of the mangrove forests ? **1**

a) Leopard
b) Lion
c) Monkey
d) Royal Bengal Tiger

112.  1

Which type of vegetation is shown in the picture?

a) Tropical Deciduous Forests
b) Montane Forests
c) Mangrove Forests
d) Tropical Thorn Forests and Scrubs

113. Which of the following is not correctly matched ? 1

a) Gir – Gujarat
b) Manas – Assam
c) Dudhwa – Rajasthan
d) Dachigam – J & K

114. Which of the following region of India possesses tropical evergreen forests ? 1

a) Western Ghats and Andaman Nicobar island.
b) Madhya Pradesh and Maharashtra.
c) Jammu and Kashmir and Jharkhand.
d) Rajasthan and Gujarat.

115. Why leaves of thorn forests mostly thick and small ? 1

a) So that plants can get minimum sunlight.
b) To Minimize Photosynthesis.
c) To Maximise evaporation.
d) To Minimize evaporation.

116. In which of the following states elephants are found ? 1

a) Assam, Karnataka
b) Manipur, West Bengal
c) Assam, Gujarat
d) West Bengal, Orissa

117. To which one of the following types of vegetation does rubber belong to ? 1

a) Tundra
b) Tidal
c) Himalayan
d) Tropical Evergreen

118.  1

Which of the following option best describes the given picture?

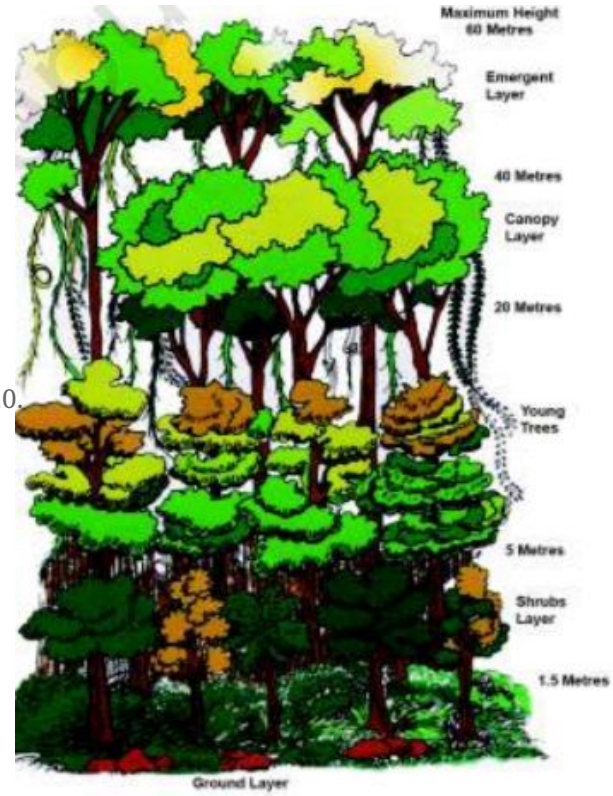
a) Migratory Birds
b) Shifting Birds
c) Extinct Birds
d) Endangered Birds

119.  1

Which of the following is true with respect to the above picture?

a) The Gir Forest is the last remaining habitat of the Asiatic lion.
b) The Kanha Forest is the last remaining habitat of the Asiatic lion.
c) The Corbett sanctuary is the last remaining habitat of the Asiatic lion.
d) The Kaziranga sanctuary is the last remaining habitat of the Asiatic lion.

1

120. 

Which of the following option is not true with respect to the given picture?

a) They are at their best in areas having more than 200 cm of rainfall with a short dry season.

b) The trees reach great heights up to 60 metres or even above.

c) There is no definite time for trees to shed their leaves. As such, these forests appear green all the year round.

d) Bamboos, sal, shisham, sandalwood, khair, kusum, arjun, mulberry are other commercially important species.

Solution

Class 09 - Mathematics

MULTIPLE CHOICE QUESTION EXAMINATION

Section A

1. (d)
$12\,cm^2$.

Explanation:
Since M and N are mid-points of DC and AB respectively. Then
$\text{area}\,(\text{MCBN}) = \frac{48}{2} = 24$ sq. cm
Now, MD is diagonal, then
$\text{area}\,(\triangle\text{BMC}) = \frac{24}{2} = 12$ sq. cm
Now, by ASA congruency, $\triangle\text{BMC} \cong \triangle\text{DMC}$
$\Rightarrow \text{area}\,(\triangle\text{DMC}) = 12$ sq. cm
$\Rightarrow \frac{1}{2} \times$ DM $\times$ DE = 12
$\Rightarrow \frac{1}{2} \times$ MC $\times$ DE = 12 [Given: DM = MC]
$\Rightarrow \text{area}\,(\triangle\text{EMC}) = 12$ sq. cm

2. (b)
$30\ cm^2$.

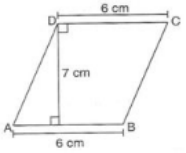
Explanation:
Since triangle PQR and parallelogram PRBA are on the same base PR and between the same parallels, then
$\text{area}\,(\triangle\text{PQR}) = \frac{1}{2} \times \text{area}\,(||gm\text{PRBA})$ ....(i)
Similarly, $\text{area}\,(\triangle\text{PRS}) = \frac{1}{2} \times \text{area}\,(||gm\text{PDCR})$....(ii)
Adding eq.(i) and (ii), we have
$\text{area}\,(\triangle\text{PQR}) + \text{area}\,(\triangle\text{PRS}) = \frac{1}{2} \times \text{area}\,(||gm\text{PRBA})\,\frac{1}{2} \times \text{area}\,(||gm\text{PDCR})$
$\Rightarrow \text{area}\,(\text{PQRS}) = \frac{1}{2} \times \text{area}\,(||gm\text{ABCD})$
$\Rightarrow \frac{1}{2} \times \text{area}\,(||gm\text{ABCD}) = 15$ sq. cm
$\Rightarrow \text{area}\,(||gm\text{ABCD}) = 30$ cm^2

3. (d)
(3a + b) : (a + 3b).

Explanation:
Area of trapezium ABCD = $\frac{1}{2}(a+b)\,h$
Since $\text{EF} \parallel \text{AB}$, and EF lies half way between AB and CD.
Therefore, perpendicular distance between AB and EF and between DF and CD are each $\frac{1}{2}h$.
The length EF lies half way between that of AB and that of CD.
Therefore, EF = $\frac{1}{2}(a+b)$
Therefore, $\text{area}\,(\text{ABFE}) = \frac{1}{2}\left[a + \frac{1}{2}(a+b)\right] \times \frac{1}{2}h = \frac{1}{8}(3a+b)\,h$
And $\text{area}\,(\text{EFCD}) = \frac{1}{2}\left[\frac{1}{2}(a+b) + b\right] \times \frac{1}{2}h = \frac{1}{8}(a+3b)\,h$
Therefore, $\frac{\text{area}(||gm\text{ABFE})}{\text{area}(||gm\text{EFCD})} = \frac{\frac{1}{2}\left[a+\frac{1}{2}(a+b)\right]\times\frac{1}{2}h=\frac{1}{8}(3a+b)h}{\frac{1}{2}\left[\frac{1}{2}(a+b)+b\right]\times\frac{1}{2}h=\frac{1}{8}(a+3b)h}$
$\Rightarrow \frac{\text{area}(||gm\text{ABFE})}{\text{area}(||gm\text{EFCD})} = \frac{3a+b}{a+3b}$
$\Rightarrow \text{area}\,(||gm\text{ABFE}) : \text{area}\,(||gm\text{EFCD}) = (3a+b) : (a+3b)$

4. (a)
$42\ cm^2$.

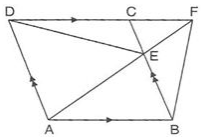
Explanation:
In the given figure,



Area of quad. ABCD = Base $\times$ Height = 7 $\times$ 6 = 42 cm^2

5. (a)
13 sq. units.

Explanation:
Construction: Join AC.



Since triangle ABC and ABF are on the same base and between same parallels, then
$\text{area}\,(\triangle \text{ABF}) = \text{area}\,(\triangle \text{ABC})$
$\Rightarrow \text{area}\,(\triangle \text{ABF}) - \text{area}\,(\triangle \text{ABE}) = \text{area}\,(\triangle \text{ABC}) - \text{area}\,(\triangle \text{ABE})$
$\Rightarrow \text{area}\,(\triangle \text{BEF}) = \text{area}\,(\triangle \text{AEC})$ .....(i)
Also, $\text{area}\,(\triangle \text{AEC}) = \text{area}\,(\triangle \text{DCE})$ .....(ii)
From eq.(i) and (ii), we get
$\text{area}\,(\triangle \text{DCE}) = \text{area}\,(\triangle \text{BEF}) = 13\ \text{cm}^2$

6. (d)
$ar\ (\|\ ABCD) = ar\ (rect.\ EFCD)$

Explanation:
If a parallelogram and a rectangle are on the same base and between the same parallels, then area of parallelogram and that of rectangle are equal.
Therefore, according to question,
$ar\ (\|\ ABCD) = ar\ (rect.\ EFCD)$

7. (a)
$16\ cm^2$.

Explanation:
Since P is the mid-point of AB. Therefore,
BP = $\frac{1}{2}$AB = 4 cm
And, height of the triangle BPD = AD = 8 cm
Therefore,
$\text{area}\,(\triangle \text{BPD}) = \frac{1}{2} \times 4 \times 8 = 16\ \text{cm}^2$

8. (b)
$160\ cm^2$.

Explanation:
Given: CQ : QP = 3 : 1
$\text{area}\,(\triangle \text{BQC}) = 3 \times \text{area}\,(\triangle \text{PBQ}) = 3 \times 10 = 30\ \text{cm}^2$
Then, $\text{area}\,(\triangle \text{PBC}) = \text{area}\,(\triangle \text{PBQ}) + \text{area}\,(\triangle \text{QBC}) = 10 + 30 = 40\ \text{cm}^2$
Since CP is the median of triangle ABC, then
$\text{area}\,(\triangle \text{PBC}) = \text{area}\,(\triangle \text{APC}) = 40\ \text{cm}^2$
$\Rightarrow \text{area}\,(\triangle \text{ABC}) = 40 + 40 = 80\ \text{cm}^2$

Since AC is a diagonal of parallelogram ABCD, therefore,
$\text{area}\,(\|gm\text{ABCD}) = 2 \times \text{area}\,(\triangle\text{ABC}) = 2 \times 80 = 160\ \text{cm}^2$

9. (d)
$ar\ (\triangle ADC) = ar(\triangle CBA)$

Explanation:
In the given figure,
Area of triangle ADC = $\frac{1}{2} \times$ DC $\times$ AE
And, Area of triangle CBA = $\frac{1}{2} \times$ AB $\times$ AE [Since AE is the height of triangle CBA also as it is between two parallel lines]
$\Rightarrow$ Area of triangle = $\frac{1}{2} \times$ DC $\times$ AE [Since AB = DC, opposite sides of a parallelogram are equal]
Therefore, $ar\ (\triangle ADC) = ar(\triangle CBA)$

10. (b)
$9\ cm^2$.

Explanation:
According to quesiton,
$\text{area}\,(\triangle\text{ABD}) = \text{area}\,(\triangle\text{ADC})$ .....(i)
And, $\text{area}\,(\triangle\text{GBD}) = \text{area}\,(\triangle\text{GDC})$ .....(ii)
Subtracting eq.(ii) from eq.(i), we get
$\text{area}\,(\triangle\text{AGB}) = \text{area}\,(\triangle\text{AGC})$
Similarly, $\text{area}\,(\triangle\text{AGB}) = \text{area}\,(\triangle\text{BGC})$
Therefore, $\text{area}\,(\triangle\text{AGB}) = \text{area}\,(\triangle\text{BGC}) = \text{area}\,(\triangle\text{AGC})$
But $\text{area}\,(\triangle\text{AGB}) + \text{area}\,(\triangle\text{BGC}) + \text{area}\,(\triangle\text{AGC}) = \text{area}\,(\triangle\text{ABC})$
$\Rightarrow 3 \times \text{area}\,(\triangle\text{BGC}) = \frac{27}{3} = 9\ \text{cm}^2$

11. (d)
$12\ cm^{2\cdot}$.

Explanation:
Since triangles BQD and BQA are on the same base BQ and between the same parallels. Therefore,
$\text{area}\,(\triangle\text{BQD}) = \text{area}\,(\triangle\text{BQA}) = 3$ sq. cm
In triangles ABQ and CQP,
$\angle\text{AQB} = \angle\text{CQP}$ [Vertically opposte angles]
AB = CP [Since CP = DC and DC = AB]
BQ = CQ [Given]
Therefore, $\triangle\text{ABQ} \cong \triangle\text{CQP}$ [By SAS congurancy]
$\Rightarrow \text{area}\triangle\text{ABQ} = \text{area}\triangle\text{CQP} = 3$ sq. cm
Similarly using SAS criterion of congurancy, $\triangle\text{CQP} \cong \triangle\text{DCQ}$
$\Rightarrow \text{area}\triangle\text{CQP} = \text{area}\triangle\text{DCQ} = 3$ sq. cm
Now, BD is diagonal of parallelogram ABCD
$\text{area}\,(\|gm\text{ABCD}) = 2 \times \text{area}\,(\triangle\text{BCD}) = 2 \times (3 + 3) = 12$ sq. cm

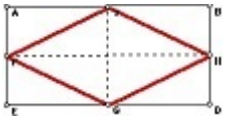
12. (b)
$50\ cm^2$.

Explanation:
Since parallelograms ABEF and ABCD are on the same base and between two parallels, then
$\text{area}\,(\|gm\text{ABEF}) = \text{area}\,(\|gm\text{ABCD}) = 50$ sq. cm
Since parallelograms ABEF and AFGH are on the same base and between two parallels, then
$\text{area}\,(\|gm\text{ABEF}) = \text{area}\,(\|gm\text{AFGH}) = 50$ sq. cm

13. (a)
$13.5\ cm^2$.

Explanation:
Since triangle AGB and parallelogram AGEF are on the same base AG and between the same parallels.
Therefore,
$\text{area}\,(\triangle \text{AGB}) = \frac{1}{2} \times \text{area}\,(\|gm\text{AGEF}) = \frac{1}{2} \times 27 = 13.5$ sq. cm
Also, since triangle AGB and parallelogram ABCD are on the same base AG and between the same parallels.
Therefore,
$\text{area}\,(\triangle \text{AGB}) = \frac{1}{2} \times \text{area}\,(\|gm\text{ABCD})$
$\Rightarrow \frac{1}{2} \times \text{area}\,(\|gm\text{ABCD}) = 13.5$ sq. cm
$\Rightarrow \text{area}\,(\|gm\text{ABCD}) = 27$ sq. cm
$\Rightarrow \text{area}\,(\triangle \text{ADG}) + \text{area}\,(\triangle \text{GBC}) + \text{area}\,(\triangle \text{AGB}) = 27$ sq. cm
$\Rightarrow \text{area}\,(\triangle \text{ADG}) + \text{area}\,(\triangle \text{GBC}) + 13.5 = 27$ sq. cm
$\Rightarrow \text{area}\,(\triangle \text{ADG}) + \text{area}\,(\triangle \text{GBC}) = 13.5$ sq. cm

14. (c)
a rhombus of area 24 cm^2

Explanation:
We know, that the figure obtained on joining the midpoints of a rectangle is a rhombus.

Let ABDE be a rectangle in which AB = 8 cm and BD = 6 cm.
And F, G, H and I are the mid-points of the sides AB, BD, DE and AE respectively. FGHI is a rhombus.
Now, the diagonals of the rhombus FGHI are FH and GI.
FH = AB = 8 cm and GI = BD = 6 cm
Area of rhombus FHGI = $\frac{1}{2} \times$FH $\times$ GI = $\frac{1}{2} \times$ 8 $\times$ 6 = 24 cm^2
Therefore, the figure obtained by joining the mid-points of the adjacent sides of a rectangle of sides 8 cm and 6 cm is a rhombus with area 24 cm^2.

15. (c)
$15\ cm^2$.

Explanation:
In the given figure, parallelogram ABCD and triangle ABE are on the same base and between the same parallels.
Therefore, $\text{area}\,(\triangle \text{ABE}) = \frac{1}{2} \times \text{area}\,(\|gm\text{ABCD})$
$\Rightarrow \text{area}\,(\triangle \text{ABE}) = \frac{1}{2} \times 30 = 15\ \text{cm}^2$
Now Area of parallelogram ABCD = $\text{area}\,(\triangle \text{ADE}) + \text{area}\,(\triangle \text{ABE}) + \text{area}\,(\triangle \text{BCE})$
$\Rightarrow$ 30 = $\text{area}\,(\triangle \text{ADE}) + 15 + \text{area}\,(\triangle \text{BCE})$
$\Rightarrow \text{area}\,(\triangle \text{ADE}) + \text{area}\,(\triangle \text{BCE})$ = 30 - 15
$\Rightarrow \text{area}\,(\triangle \text{ADE}) + \text{area}\,(\triangle \text{BCE})$ = 15 cm^2

16. (c)
28^o

Explanation:
$\angle ADB + \angle BDC = 118^0$
$90^0 + \angle BDC = 118^0 \Rightarrow \angle BDC = 28^0$

17. (d)
40^o

Explanation:

Angle made by a chord at the centre is twice the angle made by it on any point on the circumference.

$x = \frac{\angle AOB}{2} = \frac{80^0}{2} = 40^0$

18. (c)

$90^o, 45^o$

Explanation:

Here, given

,

OP = OQ and OR = OQ (Radius of circle)

So, {angles opposite to equal sides are also equal}

Hence,

PQR = 25^o + 20^o = 45^o

and PQR = 2 PQR = 2 45^o = 90^o

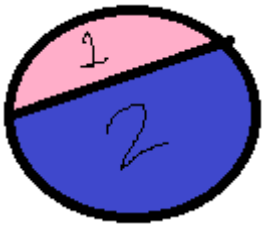
{Angle subtended by same sides on centre is double the angle at opposite vertex}

19. (d)

a segment

Explanation:

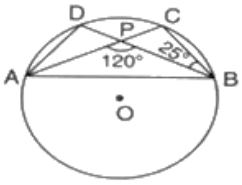
The area in pink and blue are called segment .i.e. area between chord and either of the arc.



20. (c)

95^o

Explanation:



Now, $\angle APB + \angle CPB = 180^0$ (Linear Pair)

$120^0 + \angle CPB = 180^0$

$\angle CPB = 60^0$

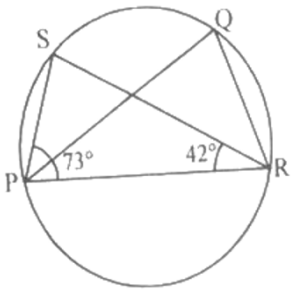
Now from angle sum property, we can calculate the values of $\angle PCB$ and we find that $\angle PCB = 95^0$

Since, $\angle PCB = \angle ADB = 95^0$

21. (d)

65°

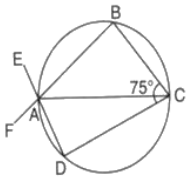
Explanation:



∠PQR = ∠PSR = 180° - 73° - 42° = 65°

22. (b)
15^o

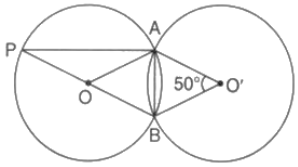
Explanation:



$\angle B = 90^0$ (Angle in semicircle)
$\angle BAD = 180^0 - 75^0 = 105^0$
$\angle EAF = \angle BAD = 105^0$
$\angle EAF - \angle ABC = 105^0 - 90^0 = 15^0$

23. (b)
25^o

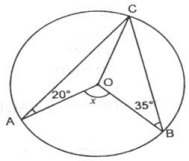
Explanation:



Since both the triangles are congruent,
So, OA = O'A,
OB = O'B
AB = AB (Common)
Hence, $\triangle AOB \cong \triangle AO'B$
Thus, $\angle AOB = \angle AO'B = 50^0$
Since, PB is a straight line, therefore:-
$\angle$AOP + $\angle$AOB = 180^o
$\Rightarrow \angle$AOP = 180^o - 50^o = 130^o
Again, In triangle OPA,
$\Rightarrow \angle$P = $\angle$A
$\Rightarrow \angle$A + $\angle$P + $\angle$O = 180^o
$\Rightarrow 2\angle$P + 130^o = 180^o
$\Rightarrow \angle P = \frac{50^0}{2} = 25^0$
Thus, $\angle OPA = 25^0$

24. (a)
110^o

Explanation:



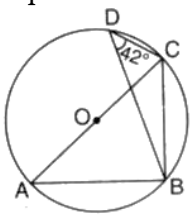
$\angle$ACO = $\angle$CAO = 20^o (because OA = OC)
$\angle$OBC = $\angle$OCB = 35^o (because OB = OC)
$\angle$ACB = 55^o
x = $2\angle$ACB = $2 \times 55^o = 110^o$

25. (d)
90^o

Explanation:
Angle inscribed in a semicircle is a right angle. Its a given theorem.

26. (c)
48^o

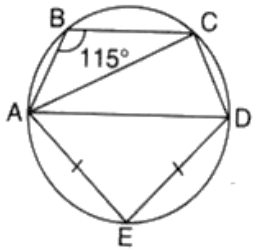
Explanation:



Here, $\angle BDC = BAC = 42^o$ {Angles in same segment are equal}
now, since AC is diameter so, ABC forms a semi-circle, thus $\angle ABC = 90^o$
So, in triangle ABC $\angle BAC + \angle ABC + \angle ACB = 180^o$
$\angle ACB$ = 180 - (90 + 42)
= 180° - 132°
= 48°

27. (c)
70^o

Explanation:



Since, AE = DE,
therefore, $\angle DAE = \angle ADE = 45^0$ (In $\Delta AED, \angle E = 90^0$ And other two angles are equal.)
Now, BADC is a cyclic quadrilateral,

$\Rightarrow \angle B + \angle D = 180^o$

$\Rightarrow 115^o + \angle D = 180^o$

$\Rightarrow \angle CDA = \angle D = 65^o$

Also, $\angle ACD = 90^0$ (Angle in a semicircle)
So, we have:-
In $\triangle$ACD,

$\Rightarrow \angle CAD + \angle ACD + \angle CDA = 180^o$

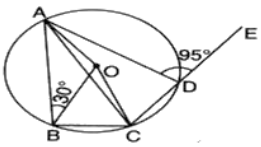
$\Rightarrow \angle CAD + 90^o + 65^o = 180^o$

$\Rightarrow \angle CAD = 25^o$

Finally,
$\angle CAE = \angle CAD + \angle DAE = 25^0 + 45^0 = 70^0$

28. (b)
5^o

Explanation:



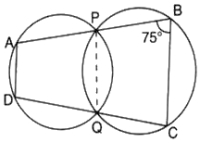
Here, $\angle ADC$ & $\angle ADE$ are supplementary to each other,
so, $\angle ADC$ = 180 - 95 = 85°
Also, ABCD is also a cyclic quadrilateral so, $\angle ADC$ and $\angle ABC$ are supplementary
so, $\angle ABC$ + $\angle ADC$ = 180°
$\angle ABC$ = 180 - 95 = 85°
angle subtended at centre is double the angle suntended at circumference.
so, $\angle AOC$ = 170°
Now, in triangle AOC, OA = OC(Radii) so,$\angle OAC = OCA$
$\angle OCA + \angle OAC + \angle AOC = 180^\circ$
2$\angle OAC$ = 180 - 170 = 10°
$\angle OAC$ = 5°

29. (a)
100^o

Explanation:
Angle made by a chord at the centre is twice the angle made by it on any point on the circumference.
Therefore,
$\angle QOR = 2\angle QPR = 50^0 * 2 = 100^0$

30. (b)
105^o

Explanation:



Since $\angle PQC + \angle PBC = 180^0$ (Opposite angles of a cyclic quadrilateral)
$\angle PQC = 180^0 - 75^0 = 105^0$
Again, $\angle DQP + \angle PQC = 180^0$ (Linear Pair)
so, $\angle DQP = 75^0$
Also, $\angle PAD + \angle DQP = 180^0$ (Opposite angles of a cyclic quadrilateral)
$\angle PAD = 105^0$

31. (a)
rectangle

Explanation:
Let, Two parallel lines AB & CD are intersected by a transversal line L at P & R respectively.
PQ, RQ, RS & PS are bisectors of $\angle APR, \angle PRC, \angle PRD, \angle BPR$ respectively.
Since, $AB \parallel CD$ and L is a transversal
$\implies \angle APR = \angle PRD$ (alternate interior angles)
$\implies \frac{1}{2}\angle APR = \frac{1}{2}\angle PRD \implies \angle QPR = \angle PRS$
But these are alternate interior angles.
$\therefore PQ \parallel RS. Similarly, QR \parallel PS$
$\therefore PQRS$ is a parallelogram.
Also, $\angle APR + \angle BPR = 180^0$ (LINEAR PAIR)
$\implies \frac{1}{2}\angle APR + \frac{1}{2}\angle BPR = 90^0 \implies \angle QPR + \angle SPR = 90^0 \implies \angle QPS = 90^0$
Hence, PQRS is a rectangle.

32. (d)
3.5 cm.

Explanation:
To construct a triangle, whose base, base angle and difference of other two sides are given, the difference of other two sides must be less than its base.
As in this case, AB - AC < BC, so, it is possible to construct it.

33. (c)
360°

Explanation:
Let ∠ACD, ∠BAE, ∠CBF be ∠a, ∠b, ∠c respectively.
As, the sum of angles in a triangle is 180° i.e. x + y + z = 180°
From the figure, we have,
∠a + x = 180° [LINEAR PAIR],
∠b + y = 180° [LINEAR PAIR],
∠c + z = 180° [LINEAR PAIR]
Adding the above three equations, we get,
∠a + x + ∠b + y + ∠c + z = 180° + 180° + 180°
(∠a + ∠b + ∠c) + (x + y + z) = 540°
(∠a + ∠b + ∠c) = 180° = 540°
∠a + ∠b + ∠c = 360°

34. (d)
reflex angle

Explanation:
An angle whose measure is greater than 180^0 but less than 360^0 is called Reflex Angle.

35. (b)
4.5 cm

Explanation:
To construct a triangle whose base, base angle and difference of other two sides are given, the difference of other two sides must be less than its base.
But in this case, BC-AC>AB, so, we cannot construct it.

36. (d)
2.8 cm

Explanation:
To construct a triangle whose base, base angle and difference of other two sides are given, then in that case, the difference of other two sides should be less than the base. i.e.. AB - AC should be less than BC.

37. (a)
72^0

Explanation:
Supplementary angles are those angles whose sum are 180^0.
So, $108^0 + x^0 = 180^0$
$\implies x^0 = 180^0 - 108^0 = 72^0$
Thus the supplementary of 108^0 is 72^0.

38. (d)
3.2 cm

Explanation:

To construct a $\triangle ABC$, whose, base BC=3 cm, base angle $\angle C = 30^0$ and sum of other two sides i.e. AB + AC is given, the sum of other two sides should be more than its base i.e. AB+AC should be greater than BC. As 3.2>3, so , we can construct the $\triangle ABC$.

39. (b)
SSS

Explanation:
In $\triangle BEF \; and \; \triangle BDF$,
BE = BD (lines formed by same arc)
BF = BF (common)
EF = DF (sides from same arc)
hence, $\Rightarrow \triangle BEF \cong \triangle BDF$ (BY SSS)

40. (b)
$67\frac{1}{2}^\circ$

Explanation:
It is Given that, $\angle$BAC = 90° Also, $\angle$BAD = $\angle$CAD = $\frac{\angle BAC}{2} = \frac{90^0}{2}$ = 45° ,
and $\angle$DAE = $\angle$CAE = $\frac{\angle DAC}{2} = \frac{45^0}{2} = 22\frac{1}{2}^0$,
$\Rightarrow \angle$BAE = $\angle$BAD + $\angle$DAE = 45° + $22\frac{1}{2}^0 = 67\frac{1}{2}^0$

Solution

Class 09 - Science

Multiple Choice Questions Examination

Section A

41. (b)
(c) and (d) are correct.

Explanation:
H_2SO_4 is composed of 2 Hydrogen, 1 Sulphur and 4 Oxygen atoms. It relative molecular mass is 98.

42. (c)
(a), (c) and (d) are correct

Explanation:
A **mole** is defined as the amount of a substance which contains the same number of elementary entities (e.g. atoms, molecules, ions, electrons, photons) as atoms in 0.012 kilograms of carbon-12. **Gram atomic mass** is the mass (in grams) of one mole of atoms in a monatomic element. It is numerically equal to the relative atomic mass (or atomic weight) in grams. **Gram molecular mass** is the mass (in grams) numerically equal to the molecular weight of a substance or the sum of all the atomic masses in its molecular formula.

43. (c)
black

Explanation:
Copper(II) oxide or cupric oxide is the inorganic compound with the formula CuO. A black solid, it is one of the two stable oxides of copper, the other being Cu_2O or cuprous oxide. As a mineral, it is known as tenorite.

44. (a)
acidic

Explanation:
Molecules whose Lewis structures indicate an atom to have an octet as a result of the formation of one or more multiple bonds will often function as Lewis acids. Examples are CO_2, SO_3, SO_2.
SO_3 is acidic in nature as it is non-metallic oxide.

45. (d)
Calcium, Oxygen

Explanation:
The chemical formula of Quick lime is CaO. So, Calcium (Ca) and Oxygen (O) elements are present in Quick lime.

46. (c)
charcoal ash

Explanation:
Magnesium burns in air to give magnesium oxide giving white light and releasing enormous energy.
$2Mg + O_2 \rightarrow 2MgO$
Magnesium oxide is white powder obtained on burning of magnesium ribbon.

47. (d)
Both the statements - A and B

Explanation:
Both the statements are correct. A mole is also known as a chemist's dozen. A mole, just like a dozen, is a common counting unit. A counting unit is a convenient number that makes it easier to count objects. The mass of one-twelfth of the mass of one atom of Carbon is taken as 1 u.

48. (c)
1/2 mole

Explanation:
Molecular mass of $H_2O_2$is 34 u. So, 34 g of hydrogen peroxide will contain 1 moles. Therefore, 17 g of hydrogen peroxide will contain 17/34 moles or $\frac{1}{2}$mole.

49. (c)
Dalton was the first to state that the smallest indivisible portion of matter is an atom.

Explanation:
Dalton was the first to state that the smallest indivisible portion of matter is an atom.
The law of conservation of mass was given by A.Lavoisier. The law of constant proportions was stated by Louis Proust. The molecules of noble gas elements are monoatomic in nature.

50. (a)
Both have the same number of moles.

Explanation:
4 g of methane will contain 4/16 moles of molecules = 0.25 moles
11 g of CO_2 will contain 11/44 moles = 0.25 moles. Hence, both will contain an equal number of moles and an equal number of molecules.

51. (b)
post anal tail

Explanation:
All chordates have a post-anal tail. A post-anal tail is an extension of the body that runs past the anal opening.

52. (c)
Both are eukaryotic

Explanation:
Both plants and animals have well defined nucleus and cell organelles i.e. both are eukaryotic.

53. (a)
Arthropoda

Explanation:
Arthropoda has open circulatory system. It doesn't have arteries and veins. It's body cavity (coelomic cavity) is filled with blood.

54. (b)
Spirally arranged and ribbon-shaped with pyrenoids

Explanation:
Chloroplast in Spirogyra is ribbon-shaped and arranged spirally. Ribbons are are twisted towards right in ascending order.

15. (d)
Order and Genus

Explanation:

56. (d)
calcium carbonate

Explanation:
Star fish belong to invertebrates and do not have actual skeleton although it has calcium carbonate plates called ossicles as endoskeleton.

57. (c) Protista
Explanation:
Amoeba and paramecium are the monerans with single celled body. They have very simple habit and habitat and all metabolic activities are performed within the cell with the help of water current.

58. (c)
Dogfish

Explanation:
Dogfish is a member of shark family and has cartilaginous skeleton, Gill slits and fins.

59. (b)
Earthworm, insect and crab

Explanation:
Earthworm, insect and crab are invertebrates as neither of these have vertebral column.

60. (d) Wheat
Explanation:
Wheat has leaves with parallel venation which is a characteristic feature of monocots and it has leaf sheath which covers the stem.

61. (c)
Fungi

Explanation:
The mycelium is made up of filaments called hyphae found in fungi.A hyphae consists of one or more cells surrounded by a tubular cell wall. In most fungi, hyphae are divided into cells by internal cross-walls called "septa" (singular septum). Septa are usually perforated by pores large enough for ribosomes, mitochondria and sometimes nuclei to flow between cells.

62. (b)
Jointed legs

Explanation:
Jointed legs is a characteristic feature of Arthropods.

63. (d) Gymnosperms
Explanation:
Gymnosperms are the just primitive to angiosperms and these are non flowering plants. They reproduce by forming male and female cones as their reproductive organs.

64. (a)
Urchins

Explanation:
Urchins also called sea urchins are marine animals having spiny body and belong to phylum echinodermata

65. (c)
Bony fishes

Explanation:
Bony fishes have air bladder which is also known as swim bladder because it is filled with air and provides buoyancy.

66. (a) does not change
Explanation:
Potential energy will not change as the road is leveled and the height of the body remains the same, although its speed increases.

67. (c) In the direction of A
Explanation:
The momentum after the collision is in the direction of A because of less momentum.

68. (c) body moves along the direction of the applied force
Explanation:
The work done is positive if the applied force is in the same direction as the direction of motion.

69. (a) kinetic energy increases 4 times
Explanation:
K.E. = $\frac{1}{2}$ mv^2
If speed double so, v = 2v
K.E. = $\frac{1}{2}$ $m(2v)^2$ =$\frac{1}{2}$ $m(4v^2)$ = 4($\frac{1}{2}mv^2$)

70. (a)
6 m

Explanation:
Energy = mgh = m ×10 × 10 = 100m Joule.
Energy is reduced by 40% then the remaining energy is 60m Joule.
Therefore 60 m = m × 10 × h`
or h` = 6 m

71. (a)
80 times

Explanation:
Total work = p x t =120 J ,
Number times heartbeat in 1 min. = total work done / work done in each beat
= $\frac{120}{1.5}$ = 80 times

32. (b) there is no component of force, parallel to the direction of motion
Explanation:
Work is done whenever a force or a component of a force results in a displacement. No component of the force is acting in the direction of motion.

73. (d) 27
Explanation:
Power = Energy consumed/ Time
Given power = 60W = 0.06kW
Therefore, For one day energy consumed, 0.06kW = $\frac{Energy\ consumed}{5\ hr}$
0.30kWh = Energy consumed

0.30 unit one day.
Now for 30 days, = 0.30 × 30 = 9 UNIT
Given for 1 unit cost = Rs.3
Hence cost for 9 unit = 9 × 3 = Rs 27

74. (a) perpendicular
Explanation:
Work is done only when a certain force is applied on a object and the object moves a certain distance on the direction of the applied force. Hence work done is zero when the direction is perpendicular.

75. (c)
$p_1 = p_2$

Explanation:
$P_1 = P_2$ as dimensions and material of cuboid is same. Force exerted by each cuboid having same area of contact is same.

76. (d)
opposite parallel faces of the cuboid exerted same pressure on the sand

Explanation:
Since force per unit area remains same, so same conclusion is drawn by both the students.

77. (b) mass, velocity
Explanation:
Kinetic energy is energy possessed by an object in motion. Kinetic energy is directly proportional to the mass of the object and to the square of its velocity: K.E. = $\frac{1}{2}$ m v^2.

78. (c)
2.68 h.p

Explanation:
Velocity = 36km/h = 10m/s
w = f x s = 2000 x 10 = 2000j
P = $\frac{W}{t}$ = $\frac{2000}{1}$ = 2000 w
746W = 1hp
So, 2000 w = $\frac{2000}{746}$ = 2.68 h.p

79. (c) acceleration
Explanation:
When both spheres are dropped simultaneously from a cliff, they have same acceleration. Because, during free fall acceleration of body becomes equals to (g= 9.8m/s^2) and 'g' depends on mass of earth and radius of earth.

80. (a)
245 J

Explanation:
P.E. = mgh
m= 5kg h = 5m g = 9.8m/s^2
P.E. = 5 × 9.8 ×5
P.E. = 25× 9.8
P.E. = 245 J

Solution

Class 09 - Social Science

MULTIPLE CHOICE QUESTION EXAMINATION

Section A

81. (d)
Pradhan Mantri Gramodaya Yozana

Explanation:
Under the Pradhan Mantri Gramodaya Yojana (PMGY) launched in 2000, additional central assistance is given to states for basic services such as primary health, primary education, rural shelter, rural drinking water, and rural electrification.

82. (d) Scheduled Tribes
Explanation:
Scheduled Tribes has not seen a decline in poverty ratio.

83. (c)
Goa

Explanation:
Goa has the lowest poverty rate.

84. (d)
2400 per day

Explanation:
The accepted average calorie requirement in India is 2400 calories per person per day in rural areas and 2100 calories per person per day in urban areas. Since, Ram saran lives in rural area hence his average calorie requirement is 2400 per day.

85. (a) September 2005
Explanation:
NREGA was passed in September 2005.

86. (c) West Bengal
Explanation:
In West Bengal land reform measures have helped in reducing poverty

87. (c) NREGA
Explanation:
NREGA programme of the government provides compensation to unemployed if he fail to get 100 days employment for a year.

88. (c) Sub Saharan Africa
Explanation:
The world poverty has risen up in Sub Saharan Africa region.

89. (b)
Swarnajayanti Gram Swarozgar Yojana

Explanation:
Swarnajayanti Gram Swarozgar Yojana (SGSY) was launched in 1999. The programme aims at bringing the assisted poor families above the poverty line by organising them into self-help groups through a mix of bank credit and government subsidy.

90. (c)
Secondary sector

Explanation:
Processing of this sugar cane in factories to produce sugar is a secondary sector activity.

91. (d)
Odisha

Explanation:
As compared to other given states Odisha has maximum number of people living below poverty line.

92. (d)
Mahatama Gandhi National Rural Employment Guarantee Act.

Explanation:
MNREGA stands for Mahatama Gandhi National Rural Employment Guarantee Act.(2005).

93. (c) National Sample Survey Organisation
Explanation:
National Sample Survey Organisation (NSSO) carries out sample surveys in India.

94. (b)
Sub Saharan Africa

Explanation:
In Sub-Saharan Africa, poverty has risen from 41 per cent in 1981 to 46 per cent in 2001.

95. (d) Upper Caste
Explanation:
Upper Caste group is not vulnerable group to poverty.

96. (d)
Social exclusion

Explanation:
According to this concept, poverty must be seen in terms of the poor having to live only in poor surroundings with other poor people, excluded from enjoying social equality of better-off people in better surroundings.

97. (c) All of these
Explanation:
(i) Education (ii) Health (iii) Shelter (iv) Equality all are components of human poverty.

98. (b) China
Explanation:
Poverty in China has reduced substantially, from 85% in 1981 to 6% in 2011.

99. (b) Kerala
Explanation:
Kerala has focussed more on human resource development. Literacy rate in Kerala was 94% in 2011.

100. (a) 26%
Explanation:
The average poverty ratio in India is 26%.

101. (a) Dihang – Dibang
Explanation:
The Sunderbans in the West Bengal, Nanda Devi in Uttaranchal,the Gulf of Mannar in Tamil Nadu ,Manas and the Nilgiris (Kerala, Karnataka and TamilNadu) have been included in the world network of Biosphese reserves.

102. (c) One-horned rhinoceros
Explanation:

The common animals found in Montane forests are Kashmir stag, spotted dear, wild sheep, jack rabbit, Tibetan antelope, yak, snow leopard, squirrels, Shaggy horn wild ibex, bear and rare red panda, sheep and goats with thick hair.
One-horned rhinoceros are found in the jungles of Assam and West Bengal.

103. (a) North –West parts of the country.
Explanation:
Thorn type of vegetation is found in the north-western part of the country including semi-arid areas of Gujarat,Rajasthan, Madhya Pradesh, Chhattisgarh,Uttar Pradesh and Haryana.

104. (d) Tropical Evergreen forests
Explanation:
Some of the features of Tropical Evergreen forests are :
a) The trees reach great heights up to 60 metres or even above.
b)There is no definite time for trees to shed their leaves.As such, these forests appear green all the year round.

105. (b) Pine and deodar
Explanation:
Between 1500 and 3000 metres, temperate forests containing coniferous trees like pine, deodar, silver fir,spruce and cedar, are found.

106. (d) Manas
Explanation:
Fourteen biosphere reserves have been set
up in the country to protect flora and fauna.
Four out of these, the Sunderbans in the West Bengal, Nanda Devi in Uttaranchal,the Gulf of Mannar in Tamil Nadu and the Nilgiris (Kerala, Karnataka and Tamil Nadu) have been included in the world network of Biosphere reserves.Manas is not included in Biosphere Reserve.

107. (b) Tropical Deciduous forests
Explanation:
Tropical Deciduous Forests are also called the monsoon forests and spread over the region receiving rainfall between 200 cm and 70 cm.

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

Explanation:
A.Thorny type of vegetation is found in the north-western part of the country including semi-arid areas of Gujarat,Rajasthan, Madhya Pradesh, Chhattisgarh,Uttar Pradesh and Haryana.
B. The mangrove tidal forests are found in the areas of coasts influenced by tides and are found in Ganga Bhramaputra Delta where sundari trees are found.
C.Tropical Evergreen forests are restricted to heavy rainfall.They are at their best in areas having more than 200 cm of rainfall with a short dry season.
D.Tropical Deciduous Forests are also called the monsoon forests and spread over the region receiving rainfall between 200 cm and 70 cm.

109. (c) Tropical Deciduous forests
Explanation:
Tropical Deciduous Forests are the most widespread forests of India.They are also called the monsoon forests and spread over the region receiving rainfall between 200 cm and 70 cm.

110. (c)
Mangrove Forests

Explanation:
The given picture is of Mangrove Forests

111. (d) Royal Bengal Tiger
Explanation:

Royal Bengal Tiger,Turtels ,crocodiles, gharials and snakes are afound in mangrove forests forests. Among them Royal Bengal Tiger is very famous.

112. (d)
Tropical Thorn Forests and Scrubs

Explanation:
The given picture is of Tropical Thorn Forests and Scrubs

113. (c) Dudhwa – Rajasthan
Explanation:
The Dudhwa National Park is a national park in the Terai of Uttar Pradesh, India

114. (a) Western Ghats and Andaman Nicobar island.
Explanation:
Tropical Evergreen Forests are restricted to heavy rainfall areas of the Western Ghats and the island groups of Lakshadweep, Andaman and Nicobar,upper parts of Assam and Tamil Nadu coast.

115. (d) To Minimize evaporation.
Explanation:
In Thorn forests trees are scattered and have long roots penetrating deep into the soil in order to get moisture. The stems are succulent to conserve water.Leaves have the special feature .To minimize evaporation,leaves are mostly thick and small.

116. (a) Assam, Karnataka
Explanation:
The elephants are the most majestic animals among the mammals. They are found in the hot wet forests of Assam, Karnataka and Kerala.

117. (d) Tropical Evergreen
Explanation:
Rubber is one of the commercially important trees of Tropical Evergreen Forest.

118. (a)
Migratory Birds

Explanation:
The given picture is relating to Migratory Birds

119. (a)
The Gir Forest is the last remaining habitat of the Asiatic lion.

Explanation:
The Gir Forest is the last remaining habitat of the Asiatic lion.

120. (d)
Bamboos, sal, shisham, sandalwood, khair, kusum, arjun, mulberry are other commercially important species.

Explanation:
The given picture is of Tropical Evergreen Forests. Bamboos, sal, shisham, sandalwood, khair, kusum, arjun, mulberry are other commercially important species of Tropical Deciduous Forests