Section 1 - PaperI-English Language

1) Choose the most appropriate similar meaning word.
EMBEZZLE

A) Misappropriate
B) Balance
C) Remunerate
D) Clear

Read the passage and answer the questions that follow:

Chow Chow

The Chow Chow is a sturdily built dog, square in profile, with a broad skull and small, triangular, erect ears with rounded tips. The breed is known for a very dense double coat that is either smooth or rough. The fur is particularly thick in the neck area, giving it a distinctive ruff or mane appearance. The coat may be shaded/self-red, black, blue, cinnamon/fawn, or cream. Not all these color varieties are recognized as valid in all countries. Individuals with patchy or multicolored coats are considered to be outside the breed standard. Chow Chow eyes are typically deep set and almond shaped. The breed is distinguished by its unusual blue-black/purple tongue and very straight hind legs, resulting in a rather stilted gait. The bluish color extends to the Chow Chow's lips; this is the only dog breed with this distinctive bluish color in its lips and oral cavity (other dogs have black or a piebald pattern skin in their mouths). One other distinctive feature is the curly tail. It has thick hair and lies curled on its back. The nose should be black, but blue-coated Chow Chow can have a solid blue or slate-colored nose. According to the American Kennel Club breed standards, any other tone is not acceptable for contests. FCI countries, however, do allow a self-colored nose in the cream. The blue-black/purple tongue gene appears to be dominant, as most mixed breed dogs that come from a Chow Chow retain that tongue colour. However, the blue-black/purple tongue can also be found on the Shar Pei. This is not to say that every mixed breed dog with spots of purple on the tongue is descended from Chow Chow, as purple spots on the tongue can be found on other purebred dogs. Most commonly kept as pets, Chow Chows tend to display discernment of strangers and can become fiercely protective of their owners and property.

2) Which is NOT true about the blue pigment?

A) Chow Chow is the only dog breed with bluish color in its lips and oral cavity
B) Some purebreed dogs also have purple spots on the tongue
C) Mixed breed dogs with purple spots on the tongue are descendents only from Chow Chow
D) Purple tongue is also found on Shar Pei

3) Which of the following is a unique feature of a Chow Chow?

A) Puny skull
B) Smooth and light coat
C) Mane like fur around the neck
D) Round ears with errect tips

4) The color of Chow Chow's tongue is:

A) Slate
B) Pink
C) Purple
D) Cream

5) The nose tone accepted for contests by The American Kennel Club breed standards is :

A) Cinnamon
B) Purple
C) Black
D) Cream

6) The stilted gait in a Chow Chow is the result of

A) its sturdy square built
B) the straight hind legs
C) the blue pigment
D) its patchy coat

7) Select the right form of verb from the given options.
For dinner last night we _____ fish and chips.

 A) will have
 B) had
 C) has
 D) have

8) Select the correct option.
My brother is _____ expert at fixing cars.

 A) an
 B) a
 C) no article
 D) the

9) Select the correct form of plural from the given options.
My grandmother has four _____ who are above the age of 60 years.

 A) childrens'
 B) childrens
 C) children
 D) childs

10) Choose the most appropriate similar meaning word.
AUGUST

 A) Regular
 B) Dignified
 C) Petty
 D) Common

Section 2 - PaperI-Education and General Awareness

11) Which of the following statements was emphasized by The National Policy on Education, 1986?

A) A lamp can never light another lamp unless it continues to burn its own flame

B) The status of the teacher reflects the socio-cultural ethos of the society

C) Sound programme of professional education for teachers should be introduced

D) The destiny of India is now being shaped in her classrooms

12) Which of the following options is a special provision by which the government obtains Parliament's approval for funds sufficient to incur expenditure for a part of the year enabling it to incur expenses till a full budget is prepared or till the formation of a new government?

A) Grant-on-account

B) Vote-on-account

C) Full budget

D) Interim budget

13) Which of the following primarily analyzed the position of vocational education but also made valuable suggestions about teacher education?

A) The Abbott - Wood Report (1937)

B) Government of India Act (1935)

C) Sargent Report (1944)

D) Sadler Commission Report (1917)

14) Which of the following commissions stated, '....the elementary education of the masses, its provision, extension and improvement deserves the greatest attention in any national system of education'?

A) Hunter Commission

B) Radhakrishnan Commission

C) Mudaliar Commission

D) Kothari Commission

15) Nephron is the smallest functional and structural unit of which of the following organs?

A) Heart

B) Liver

C) Brain

D) Kidney

Section 3 - PaperI-Reasoning

16) Instruction: In the following questions mark:
1, if the question can be answered with the help of statement I alone.

2, if the question can be answered with the help of statement II alone.

3, if the question can be answered with the help of both I and II.

4, if the question can't be answered at all.

If J is the sister of P, then how is J related to S?

Statement I : P has two sisters.

Statement II : S is the husband of P.

A) 1
B) 2
C) 3
D) 4

17) Instruction: Below mentioned are statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements:
Some handbags are pouches.
All the purses are pouches.
All the trolleys are handbags.

Conclusions:
I) No trolley is pouche.
II) All the handbags are trolleys.
III) All the pouches are purses.

A) Only conclusion III follows
B) Only conclusion II follows
C) Only conclusion I follows
D) None of the conclusions follow

18) What is the Least Common Multiple of 15, 75 and 225?

A) 15
B) 75
C) 1125
D) 225

19) In a certain code language ISLANDER is written as ILSNAEDR. How is SHORTAGE written in that code language?

A) EOHTRGAS
B) SOHTRGAE
C) EOHRTGAS
D) SOHRTGAE

20) Instruction: Below mentioned are statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements:
Some cobras are snakes.
All the snakes are reptiles.

Conclusions:
I) All the reptiles are snakes.
II) Some cobras are reptiles

A) Both I and II follow
B) Only I follows
C) Only II follows
D) None of the conclusions follow

Section 4 - PaperI-Teaching Aptitude

21) PBL is a teaching method, in which complex real-world problems are used as the vehicle to promote student learning of concepts and principles as opposed to direct presentation of facts and concepts. 'PBL' stands for

A) People biased learning
B) Problem based learning
C) Project based learning
D) Problem based leveraging

22) Which of the following is called an experimental lab of the child in education system in general?

A) Science Laboratory
B) Examination hall
C) School
D) Classroom

23) The basic object of the Right to Information Act (RTI) is to empower the citizens, promote transparency and accountability in the working of the Government departments. In which year was this act introduced?

A) 2011
B) 2005
C) 2004
D) 2009

24) Which of the following options was the main aim of IEDC programme initiated in 1974 by the Ministry of Welfare, Central Government?

A) To improve literacy rate of female population in the rural areas of the country
B) To improve the secondary education facilities and minimise school dropout rates
C) To promote the integration of students with mild to moderate disabilities into regular schools
D) To promote adult education among the Scheduled Castes and Scheduled Tribes

25) Which of the following statements is TRUE with reference to the main goal behind the launch of Rashtriya Madhyamik Shiksha Abhiyan in 2009?

A) Making secondary education of good quality available, accessible and affordable to all in the age group 15-16 years
B) Providing useful, relevant and affordable elementary education for all children in the age group of 6 to 14 years
C) Focusing on elementary education of satisfactory quality with emphasis on education for life
D) Providing free education to girls, especially those belonging to the scheduled castes and scheduled tribes

26) Which of the following can be helpful to prevent cheating?

A) Give a difficult test which is not of the level of understanding of maximum students
B) Give an easy test which students can perform for sure
C) Declare a heavy fine and strict punishment before starting any test
D) Discuss personal responsibility and accountability as important skill of life

27) K-12 is the method of categorising the entire tenure of a student's journey in school into various phases. Which among the following options represent the CORRECT phases of this education system?

A) Kindergarten, Primary, Upper Primary
B) Pre-primary, Upper Primary, Secondary
C) Kindergarten, Middle, Senior
D) Preparatory, Primary, Middle

28) As explained by Dr. Marvin Marshall, which of the following statements is INCORRECT wth reference to the term 'Classroom Management'?

A) It deals with how things are done in a classroom
B) It is the teacher's responsibility
C) It is the students' responsibility
D) It includes procedures, routines and structure of the classroom

29) Which of the following teaching strategies help students keep track of a narrative's main ideas and supporting details by having them illustrate the story's important scenes?

A) Storyboarding method
B) Note taking method
C) Story telling method
D) Demonstration method

30) When was the National Open School (NOS) established as an autonomous registered society to examine and certify students up to pre-degree courses?

A) April, 1985
B) September, 1987
C) January, 1991
D) November, 1989

Section 5 - PaperII-Physical Science

31) The curve representing the variation of pressure of a gas at constant molar volume with temperature is called

A) isochore
B) isobar
C) isotherm
D) adiabat

32) If 36 g of glucose is mixed with 1 kg of water, the boiling point of water will (Given, the Ebullioscopic Constant of water (K_b) is 0.52 K kg mol^{-1})

A) remains constant
B) decrease by 0.052 K
C) decrease by 0.104 K
D) increase by 0.104 K

33) The charge to mass ratio of an electron is

A) 0.598×10^{27} C kg^{-1}
B) 1.099×10^{31} C kg^{-1}
C) 0.958×10^{8} C kg^{-1}
D) 1.758820×10^{11} C kg^{-1}

34) A plano convex lens is made up of flint glass (refractive index = 1.65) and its convex side has a curvature of radius 33 cm. Find the focal length of the plano convex lens if its convex surface is silvered.

A) 25.4 cm
B) 5 cm
C) 16.5 cm
D) 10 cm

35) Motion of a particle is defined by a relation, x(t) = 3sin2t + 3cos2t +20, where x(t) represent its position (in m) at time t (in s). Find the time at which the particle attains maximum acceleration.

A) 1.96 s
B) 1.18 s
C) 0.39 s
D) 3.32 s

36) Two charged particles having their charges in the ratio 1 : 4 are separated by a certain distance. What will be the ratio of the distance of these charges from a point between them where the resultant electric field is zero?

A) 2 : 1
B) 1 : 4
C) 1 : 2
D) 4 : 1

37) What is the SI unit of magnetic reluctance?

A) Weber
B) AT/Wb
C) AT/m
D) Tesla

38) On what principle a pressure cooker works?

A) Boiling point of water decreases with increase in pressure
B) Boiling point of water remains same with increase in pressure
C) Boiling point of water increases with increase in pressure
D) Boiling point of water remains same with decrease in pressure

39) The temperature at which the velocity of sound in air becomes 1.2 times its value at room temperature (27 °C) is

A) 159 °C
B) (-) 23 °C
C) 27 °C
D) 87 °C

40) The colour code of a carbon resistor is yellow, voilet, orange, silver. What is the value of its resistance?

A) 47 Ω ± 5%
B) 3.6 kΩ ± 5%
C) 47 kΩ ± 10%
D) 36 kΩ ± 10%

41) Which of the following series of spectral line in atomic hydrogen lies in the visible region?

A) Balmer
B) Brackett
C) Paschen
D) Lyman

42) A person is sitting on one of the chairs of a giant wheel which is rotating with certain constant velocity, at what position the person will experience maximum force from his chair?

A) Half way between the top and the bottom while going up
B) Half way between the top and the bottom while going down
C) At the bottom
D) At the top

43) What is the dimensional formula of impulse?

A) MLT^{-3}
B) MLT^{-2}
C) ML^2T^{-2}
D) MLT^{-1}

44) An ideal toroid coil of N turns with radius r carries a current I. What will be the magnetic field at a point at distance r from the center of the toroid?

A) $\mu_o NI$
B) 1
C) $(\mu_o NI)/ 2\pi r$
D) ∞

45) A particle is moving such that its position (x) can be defined in terms of time (t) by a relation $x = t^4 - 6t^2 + 8t +15$. At what time its acceleration becomes zero?

A) 2 s
B) 3 s
C) 0 s
D) 1 s

46) What type of chemical reaction is $2H_2O$ (l) + $2F_2$ (g) $\rightarrow$ $4HF(aq) + O_2(g)$?

A) Disproportionation reaction
B) Decomposition reaction
C) Combination reaction
D) Displacement reaction

47) Which of the following is NOT a part of a spectrometer?

A) Prism table
B) Travelling microscope
C) Telescope
D) Collimator

48) In which part of the spectrum does an electromagnetic radiation having frequency of the order of 10^{18} Hz lie?

A) Microwaves
B) Radio waves
C) γ- rays
D) X - rays

49) The temperature at which a real gas obeys ideal gas law over an appreciable range of pressure is called

A) Triple point
B) Ideal point
C) Critical point
D) Boyle point

50) Neutron was discovered by

A) Becquerel
B) E. Rutherford
C) J. Chadwick
D) Neils Bohr

Section 6 - PaperII-Biological Science

51) Which of the following cell organelle is also known as the "director of the cell"?

A) Plastids
B) Mitochondria
C) Lysosomes
D) Nucleus

52) Which of the following cell organelle carry genes and helps in inheritance or transfer of characters from the parents to the offspring?

A) Peroxisome
B) Vacuole
C) Lysosome
D) Nucleus

53) In plants, storage of starch in non-pigment containing plastid is called as

A) tonoplast
B) amyloplast
C) elaioplast
D) proteinoplast

54) In nitrogen cycle, which of the following is a nitrifying bacteria?

A) Pseudomonas
B) Nitrosomonas
C) Azotobacter
D) Nostoc

55) The gas layer in the stratosphere which protects life on earth from harmful ultraviolet radiation is

A) Nitrogen
B) Hydrogen
C) Ozone
D) Carbon dioxide

56) In earthworms, which of the following structures helps in osmoregulation and excretion?

A) Malpighian tubules
B) Kidney
C) Nephridia
D) Flame cells

57) The common name of the phylum Marchantiophyta is

A) Liverworts
B) Mosses
C) Hornworts
D) Lycophytes

58) The population of a different species living in a particular place, and potentially interacting with each other is termed as

A) community
B) autotrophs
C) heterotrophs
D) habitat

59) Which of the following is an example of abiotic component of an ecosystem?

A) Animals
B) Birds
C) Plants
D) Water

60) The animals of which of the following phyla are also known as flatworms?

A) Annelida
B) Aschelminthes
C) Platyhelminthes
D) Mollusca

61) Which of the following metabolic pathway is also known as EMP pathway?

A) Urea cycle
B) Glycolysis
C) Gluconeogenesis
D) Krebs cycle

62) Which of the following products are NOT obtained from coal?

A) Coal tar
B) Bitumen
C) Coke
D) Coal gas

63) Which one of the following atmospheric layer starts just above the stratosphere?

A) Exosphere
B) Troposphere
C) Mesosphere
D) Thermosphere

64) The growth of a part of a plant in response to touch is known as

A) Hydrotropism
B) Geotropism
C) Phototropism
D) Thigmotropism

65) Which of the following is NOT an example of fossil fuel?

A) Coal
B) Coke
C) Natural gas
D) Crude oil

66) The jelly like substance between the nucleus and the cell membrane is known as

A) Plastid
B) Lysosome
C) Centrosome
D) Cytoplasm

67) Which of the following greenhouse gas is also known as Marsh gas?

A) Sulphur dioxide
B) Methane
C) Nitrous oxide
D) Carbon dioxide

68) In flowering plants, in an anther, microsporangium is a structure in which microspore are formed. It is surrounded by

A) one layer
B) three layers
C) two layers
D) four layers

69) How many fatty acid chains are present in the plasma membrane phospholipids?

A) Four
B) One
C) Three
D) Two

70) Which of the following is the end product of glycolysis?

A) Iso-citrate
B) Malate
C) Pyruvate
D) Fumarate

Section 7 - PaperII-Mathematics

71) Which of the following is a quadratic equation whose roots are -2 and 2?

A) $x^2 + 2 = 0$
B) $x^2 - 4x + 4 = 0$
C) $x^2 - 4 = 0$
D) $x^2 + 4 = 0$

72) If a : b : c = 2 : 3 : 4 and 2a - 3b + 4c = 33, the value of 'c' is

A) 12
B) 9
C) 27
D) 3

73) $1 - \sin^2 A - \cos^2 A =$

A) 1
B) 2
C) sin A
D) 0

74) If $2^x \times 4^{1/5} = 2^{1/5}$, then x =

A) 2/5
B) 1/5
C) -2/5
D) -1/5

75) If θ is a positive angle and $4 \cos^2 θ - 4 \cos θ + 1 = 0$, then the value of tan (θ - 30°) =

A) √3
B) 1
C) 1/√3
D) 0

76) If $f (x) = x^2$, g(x) = (x - 3), then the value of (f o g)(5) is

A) 16
B) 8
C) 3
D) 4

77) If A : B = 3 : 2 and B : C = 3 : 4, then A : C =

A) 1 : 2
B) 3 : 4
C) 9 : 8
D) 2 : 3

78) If f(x) = 2x + 8, then what is the value of f(x) when x = 6?

A) 16
B) 14
C) 18
D) 20

79) If $\log_x 2 = 1/2$, then the value of x is

A) 4
B) 6
C) 8
D) 2

80) If A = {a, b, c, d} and B = { x, y, z}. The number of elements in A×B is

A) 11
B) 3
C) 12
D) 4

81) In a triangle ABC, if $3\angle A = 4\angle B = 6\angle C$, then $\angle B =$

A) 45°
B) 60°
C) 90°
D) 30°

82) If in a triangle ABC, $\angle ABC = 3\angle ACB$ and $\angle BAC = 2\angle ACB$, then $\angle ABC =$

A) 90°
B) 45°
C) 60°
D) 75°

83) The value of $8^{2/3}$ is

A) 3
B) 5
C) 4
D) 1

84) What is the value of $\log_8 1$?

A) 8
B) 0
C) 2
D) 1

85) If $\tan \theta = 1/4$ and θ is an acute angle, then $\operatorname{cosec} \theta =$

A) 1/17
B) 17
C) $\sqrt{17}$
D) 2/17

86) Which of the following numbers is divisible by 18?

A) 54095
B) 52036
C) 56016
D) 65043

87) $\sin 14\pi/6 =$

A) $\sqrt{3}/2$
B) 1/2
C) 1
D) 2

88) If the roots of the equation $x^2 + 4x + k = 0$ are imaginary, then which of the following is true for the values of 'k'?

A) $k < 4$
B) $k = 0$
C) $k > 1$
D) $k > 4$

89) If $(2x + 4)^2 = 196$, then the value of 'x' is

A) 20
B) 5
C) 12
D) 9

90) ABC is a triangle such that $\angle C$ is greater than 90°. Triangle ABC CANNOT be

A) an isosceles triangle
B) a scalene triangle
C) a right triangle
D) an obtuse triangle

Question Paper No:	53553_26
Answer Key	

1.	A	31.	A	61.	B
2.	C	32.	D	62.	B
3.	C	33.	D	63.	C
4.	C	34.	A	64.	D
5.	C	35.	B	65.	B
6.	B	36.	C	66.	D
7.	B	37.	B	67.	B
8.	A	38.	C	68.	D
9.	C	39.	A	69.	D
10.	B	40.	C	70.	C
11.	B	41.	A	71.	C
12.	B	42.	C	72.	A
13.	A	43.	D	73.	D
14.	A	44.	C	74.	D
15.	D	45.	D	75.	C
16.	B	46.	D	76.	D
17.	D	47.	B	77.	C
18.	D	48.	D	78.	D
19.	B	49.	D	79.	A
20.	C	50.	C	80.	C
21.	B	51.	D	81.	B
22.	A	52.	D	82.	A
23.	B	53.	B	83.	C
24.	B	54.	B	84.	B
25.	A	55.	C	85.	C
26.	D	56.	C	86.	C
27.	C	57.	A	87.	A
28.	C	58.	A	88.	D
29.	A	59.	D	89.	B
30.	D	60.	C	90.	C