ପ୍ରଶ୍ନ ସଂଖ୍ୟା: ୨୫
(ବୃତ୍ ଭରଣ ପାଇଁ ପୂର୍ଣ ପ୍ରଶ୍ନ ଚିହ୍ନ)

No. of pages : 28
(including two pages for
rough work)

ସମୟ : ୯୦ ମିନିଟ୍

Time : 90 Minutes

SSS - 2012-13

PAPER - II

ପ୍ରଶ୍ନ ସଂଖ୍ୟା : ୯୦

No. of Items : 90

ପୂର୍ଣ ସଂଖ୍ୟା : ୯୦

Full Mark : 90

12 Digit Roll Number :

Exam. Code	State Code	Year	District Code	Center Code	Serial No.
2	2 2	1 3			

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you answer the questions.

After going through them, if you wish to know anything get them clarified from the invigilator before the starting bell rings. Remember, you are not allowed to talk or ask anything once the starting bell rings.

Each question carries ONE mark. Answer all the questions.

ପରୀକ୍ଷାର୍ଥୀଙ୍କ ପାଇଁ ନିର୍ଦ୍ଦେଶାବଳୀ

ପ୍ରଶ୍ନ ଉତ୍ତିର କରିବା ପୂର୍ବରୁ ତଳ ନିର୍ଦ୍ଦେଶାବଳୀକୁ ମନ ଦେଇ ପଢ଼ | ଏଗୁଡ଼ିକ ପଢ଼ିସାରି ଯଦି କିଛି ବୁଝିବାର ଥାଏ, ପରୀକ୍ଷା ଆରମ୍ଭ ଘଣ୍ଟି ବାଜିବା ପୂର୍ବରୁ ତାହାକୁ ସ୍ପଷ୍ଟ କରନେ |

ମନେରଖ, ପରୀକ୍ଷା ଘଣ୍ଟି ବାଜିଗଲା ପରେ ପରୀକ୍ଷାର୍ଥୀ କିଛି କଥା କହିବା ପ୍ରଶ୍ନ ପଚାରିବା ବିଧେୟ |

ପ୍ରତ୍ୟେକ ପ୍ରଶ୍ନର ମୂଲ୍ୟ ଏକ ନମ୍ବର | ସମସ୍ତ ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅ |

1. Immediately after getting the booklet, write down your 12 digit Roll No in the box given above as per your Admission Card.

2. Start answering when you are told to do so. Do not turn the pages before that.

3. Do not write anything in this Booklet except the 12 digit Roll No. However you can use the blank pages provided for the rough work at the end of this booklet.

4. A separate OMR Answer Sheet is supplied for writing the answers. Write down your application from no. & 12 digit roll number on it.

1. ଏହି ପୁସ୍ତିକାଟି ପାଇବା ମାତ୍ରେ ତୁମକୁ ଦିଆଯାଇଥିବା ଆଡମିସନ କାର୍ଡ଼ରେ ଥିବାଭଳି 12ଟି ଡିଜିଟ ରୋଲ ନମ୍ବର ଲେଖ |

2. ତୁମକୁ କୁହାଯିବା, ଉତ୍ତର ଦେବାକୁ ଆରମ୍ଭ କର | ତା' ପୂର୍ବରୁ ପୁସ୍ତିକାଗୁଡ଼ିକୁ ଓଲଟାଇ ନାହିଁ |

3. ତୁମର 12 ଅଙ୍କ ବିଶିଷ୍ଟ ରୋଲ ନମ୍ବର ଛଡ଼ା ଅନ୍ୟ କିଛି ଏ ପୁସ୍ତିକାରେ ଲେଖନ ନାହିଁ | କିନ୍ତୁ ଏହି ପୁସ୍ତିକାରେ ଶେଷରେ ରଫ କାମ ପାଇଁ ଯୋଗାଯାଇ ଥିବା ଖାଲି ପୃଷ୍ଠାରେ ରଫ କାମ କରିପାର |

4. ଉତ୍ତର ଲେଖିବା ପାଇଁ ଅଲଗା ଗୋଟିଏ OMR ଉତ୍ତର ଖାତା ଦିଆଯାଇଛି | ସେଥିରେ ତୁମର ଆବେଦନର ନମ୍ବର ଏବଂ 12ଟି ଡିଜିଟ ରୋଲ ନମ୍ବର ଲେଖ |

SSS – 2012-13

1. A velocity-time graph for a moving object is shown below. What would be the total displacement during time t = 0 to t = 6s?
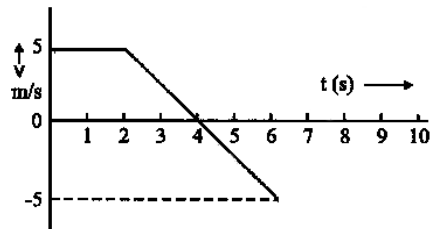
   (A) 10 m
   (B) 20 m
   (C) 2.5 m
   (D) 0.0 m

2. Two bodies of masses m and 3m, moving with velocities 3v and v respectively along same direction, collide with each other. After collision they stick together and move with a velocity V in the same direction. Then:

   (A) V = v   (B) $V = \dfrac{3}{2}v$ (C) V = 2v   (D) $V = \dfrac{4}{3}v$

3. The radius of the orbit of a geosynchronous satellite is 36000 km. then the period of revolution of a satellite with its orbital radius 9000 km would be
   (A) 24 hrs   (B) 12 hrs   (C) 6 hrs   (D) 3 hrs

4. A single electron has change $|e| = 1.6 \times 10^{-19}$C. If the current passing through a conducting wire is 0.32 A, how many electrons would pass through the wire in one hour?
   (A) 72×10^{20} (B) 20×10^{15} (C) 7.2×10^{19} (D) 2×10^{18}

5. An electric bulb is rated 100W at 220V. When it is connected to 110V main supply, the power consumed would be:
   (A) 100W   (B) 75W   (C) 50W   (D) 25W

6. A piece of wire of resistance R is cut into five equal parts out of which four of them are connected to form a square ABCD. The fifth one is connected diagonally across BD. If a battery is connected across AC, what would be the equivalent resistance in the circuit?
   (A) R/25   (B) 4R/5   (C) R/5   (D) 2R/5

7. A circular coil carrying current produces a magnetic field B_0 at its centre. This coil is made itself to 10 turns and the same current is set up in it. The magnetic field B at its centre would be
   (A) $B = B_0$ (B) $B = 10\,B_0$ (C) $B = 50\,B_0$ (D) $B = 100\,B_0$

8. An electric kettle has two thermal coils A and B. When current is passed through A, water in the kettle boils in 6 minutes. When current is passed through B, same volume of water in the kettle boils in 8 minutes. If both A and B would be joined in series and current would be passed, water would boil in
   (A) 14 minutes   (B) 7 minutes   (C) 24 minutes   (D) 24/7 minutes

9. What should be the minimum height of a plane mirror so that a 6ft tall man can see his full view image standing in front of the mirror?
   (A) 6 ft   (B) 12 ft   (C) 3 ft   (D) 2 ft

10. A virtual image larger than the object can be produced by
    (A) Convex mirror   (B) Concave lens   (C) Concave mirror   (D) Plane mirror

11. A concaved lens has focal length of 15 cm. At what distance should the object from the lens be placed so that it forms an erect and virtual image at 10 cm from the lens?
    (A) 30 cm   (B) 15 cm   (C) 60 cm   (D) 10 cm

12. A lens of power +3D and another of power-1.5 D are placed in contact. What would be the focal length of the combination?
    (A) 1.5 m   (B) − 0.67 m   (C) 0.67 m   (D) − 67.0 m

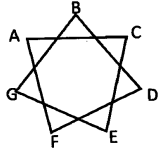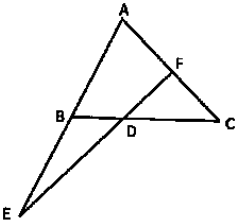13. Which of the following is not a pure substance?
    (A) Gold   (B) Glucose   (C) Pure Milk   (D) Water

14. Which of the following pair is isoelectonic?
    (A) Na^+, Ar   (B) Mg^{++}, Ca^{++} (C) K^+, Ar   (D) Na^+, K^+

15. Which of the following element has highest electron-gain enthalpy?
    (A) Oxygen
    (B) Fluorine
    (C) Chlorine
    (D) Neon

16. The geometry of $Ni(CO)_4$ is
    (A) Tetrahedral
    (B) Octahedral
    (C) Square planar
    (D) Pyramidal

17. The atomic number of third alkali metal is _____.
    (A) 3
    (B) 11
    (C) 19
    (D) 37

18. _____ is used as electrodes in batteries and composites in aircrafts.
    (A) Diamond
    (B) Graphite
    (C) Activated charcoal
    (D) Carbon black

19. Identify the metal that occurs in the native sate in nature.
    (A) Potassium
    (B) Copper
    (C) Aluminium
    (D) Zinc

20. Silicon carbide is also known as _____.
    (A) Carborundum
    (B) Cyanogen
    (C) Silane
    (D) Silicone

21. The chemical formula of white vitriol is _____.
    (A) $CuSO_4.5H_2O$
    (B) $ZnSO_4.7H_2O$
    (C) $FeSO_4.7H_2O$
    (D) $MgSO_4.7H_2O$

22. Amount of sodium hydroxide present in 500 ml of 0.2M solution is _____.
    (A) 4 gm
    (B) 8 gm
    (C) 40 gm
    (D) 20 gm

23. The mixture of CO and N_2 is called as _____.
    (A) Water gas
    (B) Producer gas
    (C) Synthetic gas
    (D) Marsh gas

24. When we smell a flower, which one of the following first receives the scent?
    (A) Dendrite of motor neuron
    (B) Dendrite of sensory neuron
    (C) Axon of motor neuron
    (D) Axon of sensory neuron

25. Which one of the following is secreted by pituitary gland?
    (A) Insulin
    (B) Estrogen
    (C) Adrenaline
    (D) Growth hormone

26. Which one of the following first receives the pollen during fertilization?
    (A) Stigma
    (B) Style
    (C) Pollen tube
    (D) Female gamete

27. Which of the following two diseases have no specific treatment?
    (A) Hepatitis and influenza
    (B) Tuberculosis and influenza
    (C) Leprosy and Hepatitis
    (D) Hydrophobia and Tuberculosis

28. Choose the correct pairing of fish and its feeding zone from the choices given below.
    (A) Rohu-Bottom Zone
    (B) Catla-Middle Zone
    (C) Common carp-Bottom Zone
    (D) Mrigal-Surface Zone

29. Which two of the following animals belong to the same Phylum?
    (A) Starfish and Nereis
    (B) Antedon and Starfish
    (C) Antedon and Chiton
    (D) Nereis and Chiton

30. Which two of the following are growth promoting hormones in plant?
    (A) Auxin and Cytokinin
    (B) Gibberelin and Ethylene
    (C) Abscisic acid and Auxin
    (D) Cytokinin and Ethylene

31. Which one of the following is having conducting tissue?
    (A) Fern
    (B) Funaria
    (C) Riccia
    (D) Marchantia

32. Which one of the following compound contains two carbon atoms?
    (A) Ethanol
    (B) Pyruvic acid
    (C) Lactic acid
    (D) Glucose

33. Which of the following two are only applicable for birds?
    (A) Warm blooded and four chambered heart
    (B) Feather and breathing by lungs
    (C) Warm blooded and egg laying
    (D) Egg laying and with Feather

34. Which of the following is not a foreign breed cow?
    (A) Sahiwal (B) Holstein (C) Brown swiss (D) Jersy

35. Read the following two statements and choose the correct answer.
    i. Stomata regulates the body temperature in plants.
    ii. Stomata helps in the absorption of minerals from the soil.
    (A) i is true but ii is false (B) i is false but ii is true (C) Both i and ii are true (D) Both i and ii are false

36. If the sum of the two roots of the equation $\dfrac{1}{x+a}+\dfrac{1}{x+b}=\dfrac{1}{c}$ is zero, then the product of the two roots is _____.

    (A) 0
    (B) $\dfrac{a^2+b^2}{2}$
    (C) $\dfrac{a+b}{2}$
    (D) $-\dfrac{\left(a^2+b^2\right)}{2}$

37. The highest power of 2 by which the product of first 100 counting numbers can be divided without any remainder is _____.
    (A) 97 (B) 96 (C) 95 (D) 94

38. If $x+y+z=1$, $x^2+y^2+z^2=2$ and $x^3+y^3+z^3=3$ then the value of xyz is _____.
    (A) 1/5 (B) 1/6 (C) 1/7 (D) 1/8

39. Four whole numbers added three at a time give sums 180, 197, 208 and 222 respectively. The largest of the four numbers is _____.
    (A) 87 (B) 88 (C) 89 (D) 90

40. The remainder when $1^{1997}+2^{1997}+\ldots\ldots+1996^{1997}$ is divded by 1997 is _____.
    (A) 0 (B) 1 (C) 197 (D) 1996

41. If the product of 1000 positive integers is 1000 then their maximum sum is _____.
    (A) 1000 (B) 1999 (C) 2000 (D) 2999

42. If t_{11} and t_{16} of an A.P. are respectively 38 and 73, then t_{31} is _____.
    (A) 178 (B) 177 (C) 176 (D) 175

43. If $f(n+1)=\dfrac{2f(n)+1}{2}$, $n=1,2,\ldots\ldots$ and $f(1)=2$, then $f(101)=$ _____.

    (A) 53 (B) 52 (C) 51 (D) 50

44. A triangle with integral sides has perimeter 8 units. The area of the triangle is _____ sq units.
    (A) 2 (B) $2\sqrt{2}$ (C) $3\sqrt{2}$ (D) 4

45. At a party of married couples, each man shook hand with everyone except his spouse and no handshakes took place between women. If 13 married couples attended the party, the number of handshakes among these 26 people was _____.
    (A) 230 (B) 22 (C) 233 (D) 234

46. If the median of $\dfrac{x}{7},\dfrac{x}{5},\dfrac{x}{6},x,\dfrac{x}{4},\dfrac{x}{3},\dfrac{x}{2}$ is 8, then the value of x is _____.
    (A) 8 (B) 24 (C) 32 (D) 48

47. If m = 7777 ……… 7777 is a 99 digit number and n = 999 ………. 999 is 77 digit number then the sum of the digits in the product m × n is _____.
    (A) 890 (B) 891 (C) 892 (D) 893

48. The value of $\sin^2 1°+\sin^2 2°+\ldots\ldots\ldots+\sin^2 89°$ is _____.
    (A) 1 (B) 44 (C) $44\dfrac{1}{2}$ (D) 45

49. If $A+B+C=\pi$ and $m\angle C$ is obtuse then $\tan A.\tan B$ is _____.
    (A) >1 (B) <1 (C) =1 (D) ≤ 1

50. The area of a circle inscribed in an equilateral triangle is 48π square units. The perimeter of the triangle is _____ units.
(A) 24   (B) 32   (C) 36   (D) 72

51. The reminder of $2005^{2002} + 2002^{2005}$ when divided by 200 is _____.
(A) 0   (B) 1   (C) 2   (D) 3

52. Let ABCD be a cyclic quadrilateral inscribed in a circle of radius 1 unit. If AB.BC.CD.DA $\geq$ 4, then the quadrilateral ABCD is a _____.
(A) Parallelogram   (B) Square   (C) Rectangle   (D) Rhombus

53. In the given figure $m\angle A + m\angle B + m\angle C + m\angle D + m\angle E + m\angle F + m\angle G =$ _____.
(A) 360°   (B) 500°
(C) 520°   (D) 540°

54. In the given figure $\dfrac{BD}{CD} = \dfrac{3}{4}$ and AE = 6BE, then $\dfrac{CF}{AF} =$ _____
(A) 2/9
(B) 4/6
(C) 3/8
(D) 5/9

55. On increasing each of the radius of the base and the height of a cone by 20% its volume will be increased by _____.
(A) 20%   (B) 40%   (C) 72.2%   (D) 72.8%

56. Who had given the title of "Mahatma" to "Gandhiji"?
(A) Bal Gangadhar Tilak   (B) Gopal Krishna Gokhle
(C) Motilal Nehru   (D) Rabindra Nath Tagore

57. Who was the political guru of Mahatma Gandhi?
(A) Bal Gangadhar Tilak   (B) Dada Bhai Naroji
(C) Badruddin Tyabij   (D) Gopal Krishna Gokhle

58. Who among the following was the Congress President when Congress declared complete independence as its goal?
(A) Jawaharlal Nehru   (B) Subhas Chadra Bose
(C) Sardar Ballabh Bhai Patel   (D) Maulana Abul Kalam Azad

59. Who among the following was responsible for the foundation of I.N.A.
(A) Ras behari Bose   (B) Subhas Chandra Bose
(C) Captain Mohan singh   (D) Major Fuzihara

60. Who among the following leaders was to associated with the Revolt of 1857?
(A) Azimullah Khan   (B) Ahmed Shah   (C) Kunwar Singh   (D) Sir Syed Ahmed Khan

61. Who wrote 'Das Capital'?
(A) Tolstoy   (B) Lenin   (C) Karl Marx   (D) Kerensky

62. Who was the last Tsar of Russia?
(A) Nicholas I   (B) Nicholas II   (C) Alexander I   (D) Alexander II

63. Who among the following leaders was not a pioneer of Non-alignment movement.
(A) J.Nehru   (B) Nasser   (C) Woodrow Wilson   (D) Tito

64. Which of the following features stood for Nazism?
(A) Anti-semitic Policy   (B) Pro-socialistic policy
(C) Pro-democratic Policy   (D) Pro-communist Policy

65. The first convention of Facist party was held at _____
(A) Rome   (B) Vatican City   (C) Milan   (D) Venice

66. Which of the following is not a feature of Fundamental Rights in India?
    (A) They are enumerated in Part III of our constitution
    (B) They are absolute in nature
    (C) Some of them are positive and some are negative in nature
    (D) They are Judiciable in the Court of law

67. Disputes relating to the election of the President of India can be adjudicated in which if the following courts?
    (A) Supreme Court of India   (B) State High Court
    (C) Subordinate Courts   (D) All of the above Courts

68. Who of the following does prorogue the Houses of the Parliament in India?
    (A) President   (B) Vice President   (C) Speaker of Loksabha   (D) Prime Minister

69. Read the following statement and indicate which one is correct?
    Statement :
    i.   Democracy is a form of government in which the Governing Body is a comparatively large fraction of the entire population
    ii. Democracy really means nothing more or less than the rule of the whole people expressing their sovereign will be their votes.
    Indications:
    (A) i is true, ii is false   (B) i is false, ii is true   (C) Both i and ii are true   (D) Both i and ii are false

70. In which year in India was the Protection of Human Rights Act enacted?
    (A) 1992   (B) 1993   (C) 1994   (D) 1995

71. The voting age in India was lowered from 21 years to 18 years by which Amendment Act of the constitution?
    (A) 24 th Amendment Act, 1971   (B) 42 nd Amendment Act, 1976
    (C) 44 th Amendment Act, 1978   (D) 61 st Amendment Act, 1989

72. Since when the Right to Information Act was implemented in India?
    (A) September 12, 2005   (B) October 12, 2005   (C) November 19, 2005   (D) December 19, 2005

73. Which of the following is not a challenge to the National Integration in India?
    (A) Regionalism   (B) Casteism   (C) Secularism   (D) Communalism

74. Which of the following is a demerit of globalisation?
    (A) Consumerism   (B) Employment opportunity
    (C) Proper use of capital and resources   (D) Cultural Osmosis

75. In which year was the United Nations Peace Keeping Forces awarded Nobel Peace Prize?
    (A) 1988   (B) 1990   (C) 1992   (D) 1994

76. Density of Population indicates the _____.
    (A) Capital-Land Ratio   (B) Land-Output Ratio   (C) Land-Labour Ratio   (D) Man-Land Ratio

77. In which year New Economic Reforms were started in India?
    (A) 1981   (B) 1991   (C) 2001   (D) 1995

78. Which sector provides Livelihood to majority of Indians?
    (A) Industry   (B) Agriculture   (C) Service   (D) Commerce

79. 'Jago Grahak Jago' slogan is meant for _____.
    (A) Consumers   (B) Producers   (C) Labourers   (D) Distributors

80. What type of unemployment is found in Indian agricultural sector?
    (A) Seasonal unemployment   (B) Cyclical unemployment
    (C) Voluntary unemployment   (D) Disguised unemployment

81. Which of the following is the oldest mountain range of India?
    (A) Aravali   (B) Nilgiri   (C) Vindhya   (D) Karakoram

82. Of which river the Chambal is a tributary?
    (A) The Narmada   (B) The Yamuna   (C) The Godavari   (D) The Tapti

83. What type of forest is found in the region where the annual rainfall is more than 200 cms?
(A) Alpine Forest (B) Evergreen Forest (C) Deciduous Forest (D) Monsoon Forest

84. Which of the following reservoirs is related to the Bhakra-Nangal Project?
(A) Krishnaraj Sagar (B) Govind Sagar (C) Gandhi Sagar (D) Nizam Sagar

85. Which is the main cash crop of Odisha?
(A) Cotton (B) Maize (C) Wheat (D) Sugarcane

86. Which of the National Highways of India connects Kolkata with Chennai?
(A) No.5 (B) No.6 (C) No.23 (D) No.42

87. From which of the ores Thorium is extracted?
(A) Ilmenite (B) Haematite (C) Monazite (D) Dolomite

88. In the production of which mineral India ranks first in the world?
(A) Manganese (B) Bauxite (C) Tin (D) Mica

89. What type of resource copper is?
(A) Exhaustible (B) Non-exhaustible (C) Potential (D) National

90. In which State of India the Kandala Port is located?
(A) Tamil Nadu (B) Kerala (C) Maharashtra (D) Gujrat