FIITJEE INTERNAL TEST

7TH CLASS

PHASE TEST - I

07 JUNE 2020

MAT & SAT

Time: 3 hours

Max. Marks:125

INSTRUCTIONS

Question Paper contains 125 questions.

Question paper consists of 5 parts (IQ , Maths, Physics, Chemistry & Biology).

Each question has 4 options with one correct answer. Bubbling of correct answer must be done on OMR Sheet.

Each question carries 1 mark. There is no negative marking.

HONESTY IS THE BEST POLICY. FINALLY HONESTY ONLY WINS. SO NEVER INVOLVE IN MALPRACTICE

IQ

Direction (1-5) Find the missing term in each of the following series.

1. 6, 13, 32, __, 130, 221
    (A) 75   (B) 69   (C) 100   (D) 85

2. 3, 6, 12, 24, 48, 96, ____
    (A) 192   (B) 182   (C) 186   (D) 198

3. 12, 15, 21, 30, 42, 57, ?
    (A) 59   (B) 63   (C) 65   (D) 75

4. 3, 5, 9, 17, 33, 65, ?
    (A) 129   (B) 128   (C) 126   (D) 132

5. 13, 35, 57, 79, 911, ?
    (A) 1113   (B) 1123   (C) 1114   (D) 1124

Directions (6-8) Find the wrong number in each of the following series

6. 13, 25, 40, 57, 79, 103, 130
    (A) 25   (B) 40   (C) 57   (D) 79

7. 2, 9, 28, 65, 126, 216, 344
    (A) 9   (B) 65   (C) 216   (D) 25

8. 14, 19, 29, 40, 44, 51, 59, 73
    (A) 59   (B) 51   (C) 44   (D) 29

Direction (9-17) Choose the missing terms out of the given alternatives

9. PMT, OOS, NQR, MSQ, _____
    (A) LUP   (B) LVP   (C) LVR   (D) LWP

10. BZA, DYC, FXE, _____, JVI
    (A) HUG   (B) HWG   (C) UHG   (D) WHG

11. ABD, DGK, HMS, MTB, SBL, ?
    (A) XKW   (B) ZAB   (C) ZKU   (D) ZKW

12. DHL, PTX, BFJ, ?
    (A) CGK   (B) KOS   (C) NRV   (D) RVZ

13. WFB, TGD, QHG, ?
    (A) NIJ   (B) NIK   (C) NJK   (D) OIK

14. KM5, IP8, GS11, EV14, ?
    (A) BX17   (B) BY17   (C) CY17   (D) CY18

15. C4X, F9U, I16R?
    (A) K25P   (B) L25P   (C) L250   (D) L27P

16. 2Z5, 7Y7, 14X9, 23W11, 34V13, ?
    (A) 27U24   (B) 45U15   (C) 47U15   (D) 47V14

17. N5V, K7T, HIOR, E14P, ____
    (A) H9R   (B) B19N   (C) HI0R   (D) B20M

Direction (18-20) Choose the correct alternative that continuous the pattern

18.   _vwu_ _uv _
(A) uvww   (B) wwvu   (C) vuww   (D) wvwu

19.   te_t_ _ _ ea
(A) aeat   (B) aeaa   (C) aaet   (D) tea

20.   t _ _ tt_ _ vv_ _ _ uuuvvv
(A) uvuuttt   (B) tttuuvv   (C) vvuuttt   (D) none of these

Direction (21-25): In each of the following questions, select the related letter from the given alternatives.

21.   BOQD : ERTG : : ANPC : ?
(A) DQSF   (B) FSHU   (C) SHFU   (D) DSQF

22.   AFKP : ZUPK : : BGLQ : ?
(A) YUQM   (B) XURO   (C) YXWV   (D) YTOJ

23.   BVSC : YEHX : : MRCP : ?
(A) NJXK   (B) LKXM   (C) NIXK   (D) OIYM

24.   EGIK : FILO : : FHJL : ?
(A) GJMP   (B) GMJP   (C) JGMP   (D) JGPM

25.   ACEG : NPRT : : ADGJ : ?
(A) NRTX   (B) ORVX   (C) NQSU   (D) NQTW

Direction (26-29): In each of the following questions find the missing alphabet analogy out of the given alternative which will replace the question mark.

26.   66 : 144 : : 99 : ?
(A) 204   (B) 289   (C) 234   (D) 324

27.   5 : 24 : : 7 : ?
(A) 3   (B) 48   (C) 63   (D) 70

28.   4,2,2,4 : 2,4,4,2 : : 6,4,4,6 : ?
(A) 4,6,4,6   (B) 4,6, 6,4   (C) 6,4,6,4   (D) 2,6,6,2

29.   49:7 : : ? :17
(A) 279   (B) 269   (C) 289   (D) 259

Direction (30-35) : In each of the following questions, find the best analogous word.

30.   'Much' is related to 'Many' in the same way as 'Measure' is related to:?
(A) Count   (B) Measures   (C) Calculate   (D) Weigh

31.   'Calf' is related to 'Cow' in the same way as 'Kitten' is related to:?
(A) Deer   (B) Bear   (C) Cat   (D) Duck

32.   'Smoke' is related to 'Pollution' in the same way as 'War' is related to:?
(A) Victory   (B)Treaty   (C) Defeat   (D) Destruction

33.   'Mountain' is related to 'Hill' in the same way as 'River' is related to:?
(A) Path   (B) Swimming   (C) Flowing   (D) Stream

34. 'Dogs' is related to 'Bark' in the same way as 'Goats' is related to:?
   (A) Bleat   (B) Crow   (C) Grunt   (D) Howl

35. Stealing : Sin : : Donation : ?
   (A) Rich   (B) Poor   (C) Holy work   (D) Donor

Direction (36-40) : In each of the following questions, four/five words are given out of which three/four are alike in some manner, while the fourth / fifth one is different. Choose the word which is different from the rest.

36. (A) Club   (B) Brush   (C) Crayon   (D) Pen

37. (A) Silver   (B) Platinum   (C) Gold   (D) Copper

38. (A) Panthor   (B) Lion   (C) Whale   (D) Fox

39. (A) Mist   (B) Cloud   (C) Rain   Vapour

40. (A) Banana   (B)Mango   (C) Guava   (D) Ginger

CHOOSING THE ODD NUMERAL
Direction (41-45): In each of the following questions, some groups of numbers are given, all of which, except one, share a common similarity while one is different. Choose the odd one out.

41. 3, 5, 11, 14, 17, 21
   (A) 21   (B) 17   (C) 14   (D) 3

42. 8, 27, 64, 100, 125, 216, 343
   (A) 27   (B) 100   (C) 125   (D) 343

43. 10, 25, 45, 54, 60, 75, 80
   (A) 10   (B) 45   (C) 54   (D) 75

44. 6, 9, 15, 21, 24, 28, 30
   (A) 28   (B) 21   (C) 24   (D) 30

45. 1, 4, 9, 16, 23, 25, 36
   (A) 9   (B) 23   (C) 25   (D) 36

Direction (46-50): In each of these questions four letter groups are given, out of which three are alike in some manner and one is different. Choose the odd one among them.

46. (A) GE   (B) MK   (C) WU   (D) QN

47. (A) BUK   (B) GAF   (C) ZNH   (D) YEM

48. (A) STUA   (B) RQPA   (C) MLKA   (D) HGFA

49. (A) PRVX   (B) MQTV   (C) DHKM   (D) BFIK

50. (A) A 1 B 2   (B) F 6 J 10   (C) K 11 E 5   (D) L 4 N 10

MATHS

51. What is the absolute value of $2 \times 4 \div 16 - 7 + 8 \div 2 \times 3 - 11 \div 2$
    (A) 1   (B) 0   (C) 2   (D) ½

52. How many integers are there between $-7/3$ to $17/3$
    (A) 8   (B) 7   (C) 5   (D) infinite

53. If the sum of 7 consecutive integers is 49, then what is the mean of the least and highest numbers among them
    (A) 7   (B) 14   (C) 49   (D) none

54. If a person has equal number of different one rupee, 5 rupee and 10 rupee coins, and has a total of 64 rupees with him; then how many coins of each denomination he has
    (A) 8   (B) 3   (C) 2   (D) 4

55. In a class test of 15 questions, for each correct answer + 4 marks and for each wrong answer – 2 marks are awarded. If a person attempts all questions and scored 42 marks. Then how many wrong answers he attempted
    (A) 2   (B) 4   (C) 3   (D) 1

56. A number between 5/7 and 8/9 is
    (A) 1/2   (B) 13/14   (C) 11/12   (D) 3/4

57. How many integral values of x can satisfy this $\dfrac{7}{9} < \dfrac{3}{x} < \dfrac{4}{5}$
    (A) 1   (B) 0   (C) 2   (D) infinite

58. $\dfrac{3.5 \div 0.7 + 2}{4 - 2\frac{1}{2} + 0.5} - \dfrac{4 \div 0.2 \times 8 - 12 \times 5}{8 \div (3 \times 4) - \frac{1}{3}} \times \dfrac{1}{50} =$
    (A) $\dfrac{5}{2}$ (B) $\dfrac{-5}{2}$ (C) $\dfrac{19}{2}$ (D) $\dfrac{-19}{2}$

59. $0.\overline{34} =$
    (A) $\dfrac{34}{99}$ (B) $\dfrac{33}{99}$ (C) $\dfrac{34}{100}$ (D) $\dfrac{33}{100}$

60. What digit will come in 105 position in the quotient of $\dfrac{1}{7}$
    (A) 8   (B) 4   (C) 1   (D) 2

61. For a particular data if $median = mean = 100$ then $mode =$
    (A) 100   (B) 10   (C) 500   (D) 200

62. If the class intervals of a frequency distribution is $0-10, 10-20, 20-30......$. What is the upper boundary of class $10-20$
    A) 10   (B) 20   (C) 15   (D) 20.5

63. What is the mean of the first six multiples of 4?
    (A) 14   (B) 12   (C) 15   (D) 16

64. For a given data 2, 4, 5, x, 9, 9, 10 (all the observations are integers only), if the median is x, then x can take
   (A) 6   (B) 7   (C) 8   (D) All of the above

65. For any data, the least and highest observations are in the ratio of 2:5 and its range is 48, then the least & highest observations are
   (A) 12, 60   (B) 22, 70   (C) 16, 64   (D) 32, 80

66. A simple equation (linear equation in one variable) has how many solutions
   (A) 1   (B) 2   (C) infinite   (D) zero

67. If the sum of a two digit number and the number obtained by reversing its digits is always divisible by
   (A) 11   (B) sum of its digits   (C) both a & b   (D) none

68. If $\dfrac{3x-1}{2x+5} = \dfrac{3}{4}$ then x =

   (A) $\dfrac{-19}{6}$ (B) $\dfrac{19}{6}$ (C) $\dfrac{19}{4}$ (D) $\dfrac{-19}{4}$

69. $\dfrac{2x+3}{5} - \dfrac{3}{4} = \dfrac{x-4}{2} + 1$ then x =

   (A) $\dfrac{-17}{2}$ (B) $\dfrac{17}{2}$ (C) $\dfrac{17}{4}$ (D) $\dfrac{-17}{4}$

70. If one third of a number exceeds its one fifth by 10, then what is the number?
   (A) 75   (B) 25   (C) 90   (D) 150

PHYSICS

71.   Rise in temperature by $1^\circ C$ is equal to
(A) Rise in temperature $32^\circ F$ (B) Rise in temperature by 1 K
(C) Rise in temperature by 273 K   (D) Insufficient information

72.   What is the SI unit of Temperature?
(A) Celsius   (B) Fahrenheit   (C) Kelvin   (D) None of these

73.   Which of the following statement is wrong?
(A) Normally, solids expand on melting   (B) Normaly, a liquid contract on freezing
(C) There is no effect on volume during cooling   (D) All of the above

74.   Woollen clothes keeps us warm during winter because
(A) Wool is a poor conductor of heat
(B) Wool is a good conductor of heat
(C) Air trapped in between fibres prevents the heat flow as it is a bad conductor
(D) Both (A) and (C)

75.   How much energy is needed to change the temperature of 50.0 g of water by $15.0^\circ C$? (Take specific heat of water as 4200 J/Kg $^\circ$C).
(A) 5000 J   (B) 3.15×10^6 J   (C) 3150 J   (D) 5×10^6 J

76.   The temperature of a body changes by $72^\circ F$. The corresponding change on Celsius scale is
(A) $14.8^\circ C$ (B) $40^\circ C$ (C) $20^\circ C$ (D) $50^\circ C$

77.   One day the minimum temperature in Delhi was recorded as $23^\circ F$. What was the temperature in degree Celsius of Delhi on that day?
(A) $15^\circ C$ (B) $-5^\circ C$ (C) $-9^\circ C$ (D) $6^\circ C$

78.   The SI unit of coefficient of linear expansion is ____
(A) $^\circ C^{-1}$ (B) K^{-1} (C) $^\circ F^{-1}$ (D) None

79.   The amount of heat absorbed by a body depends on _____.
(A) mass of the body   (B) change in temperature
(C) nature of the material   (D) all of these

80.   During the change of phase which of the following remains constant
(A) heat   (B) volume   (C) temperature   (D) none

81.   On a hypothetical scale 'x', the ice point is 40° and the steam point is 120°. For another scale 'y', the ice point and the steam point are -30° and 130° respectively. If 'x' reads 50°, then 'y' would read ____
(A) -10° (B) 0° (C) 15° (D) 20°

82.   Calculate the amount of heat required to melt 100 g of ice completely. $\left(L_f = 80 \, cal/g \right)$
(A) 80 cal   (B) 80 kcal   (C) 8 cal   (D) 8 kcal

83. The steam point and the ice point of a mercury thermometer are wrongly marked as 92°C and 2°C respectively. The correct temperature read by this thermometer is
     (A) 10 °C   (B) 20 °C   (C) 30 °C   (D) 40 °C

84. Find the temperature of an object in Fahrenheit scale, if its temperature in Kelvin is 303 K.
     (A) 70°F   (B) 55 °F   (C) 100 °F   (D) 86 °F

85. A difference of temperature of 40°C is equivalent to a difference of
     (A) 45 °F   (B) 72 °F   (C) 32 °F   (D) 25 °F

86. Heat from the Sun reaches to us due to
     (A) Radiation   (B) Convection   (C) Conduction   (D) None of the above

87. The mass of water that can be heated from 20°C to 80°C using 126000 Joules? (Take specific heat of water as 4200 J/Kg °C).
     (A) 1 Kg   (B) 0.5 Kg   (C) 2 Kg   (D) 0.2 Kg

88. How much energy is needed to raise the temperature of 10Kg block of aluminium from 100 °C to 150 °C? (Specific heat capacity of aluminium is 900 J/Kg°C).
     (A) 4.5×10^5 J   (B) 4500 J   (C) 3000 J   (D) 3×10^5 J

89. A copper rod of 5 m is heated so as to increase the temperature of the rod by 100 °C. Then find the increase in the length of the rod? Take the coefficient of linear expansion of the rod as 3×10^{-4} °C^{-1}
     (A) 45 cm   (B) 4.5 m   (C) 15 cm   (D) 1.5 m

90. The flow of heat by conduction is generally observed in case of
     (A) solids   (B) liquids   (C) gases   (D) all of these

CHEMISTRY

91. Which of the following is a bivalent cation?
    (A) oxide   (B) sulphide   (C) calcium   (D) sodium

92. Identify the correct match.
    (i) Nitride $-N^{3-}$ (ii) Chloride $-Cl^{2-}$ (iii) Magnesium $-Mg^{2+}$
    (A) (i), (ii)   (B) (i), (iii)   (C) (ii), (iii)   (D) (i), (ii), (iii)

93. Symbol of Tin is
    (A) Ti   (B) Sn   (C) Sb   (D) Tn

94. Formula of potassium permanganate is
    (A) $KMnO_4$ (B) K_2MnO_4 (C) $K(MnO_4)_2$ (D) K_3MnO_4

95. The electronic configuration (KLM…) of fourtheenth element is
    (A) 2 8 2   (B) 2 8 3   (C) 2 8 4   (D) 2 8 5

96. The molecular mass of CO_2 is
    (A) 22u   (B) 28u   (C) 38u   (D) 44u

97. An element 'X' has 16 protons in its nucleus and its mass number is 32. The number of neutrons in its nucleus and the symbol of its dinegative ion respectively are
    (A) 16, X^{2-} (B) 32, X^{2+} (C) 32, X^{2-} (D) 16, X^{2+}

98. Identify the correct set of numbers to balance the following equation.
    $$PbS + H_2O_2 \rightarrow PbSO_4 + H_2O$$
    (A) 1, 4, 1, 4   (B) 2, 4, 2, 4   (C) 4, 1, 4, 1   (D) 3, 1, 3, 4

99. $aZnS + bO_2 \rightarrow cZnO + dSO_2$
    a, b, c and d in the balanced equation are
    (A) 2, 2, 2, 1   (B) 2, 2, 3, 2   (C) 2, 3, 2, 1   (D) 2, 3, 2, 2

100. Identify the correct match.

	Column I		Column II
(i)	Mulberry leaves	(p)	Wool yielding animal
(ii)	Sheep	(q)	Yields silk fibres
(iii)	Scouring	(r)	Cleaning of sheared skin
(iv)	Cocoon	(s)	Food of silk worm

   (A) i-s, ii-r, iii-p, iv-q   (B) i-s, ii-p, iii-r, iv-q   (C) i-q, ii-r, iii-p, iv-s   (D) i-q, ii-p, iii-r, iv-s

101. The silk moth eggs are kept for hatching in an
    (A) oven   (B) straw   (C) incubator   (D) refrigerator

102. The small fluffy fibres are
    (A) combs   (B) bolls   (C) reels   (D) burrs

103. The process of selecting parents for obtaining special characters is termed as
    (A) selective breeding   (B) rearing   (C) reeling   (D) sericulture

104. Which of the following is correct statement?
(A) acids are bitter to taste
(B) bases are corrosive in nature
(C) bases turn blue litmus to red
(D) acids, turn red litmus to blue

105. Which of the following is an olfactory indicator?
(A) Turmeric
(B) Beetroot
(C) Onion
(D) Red cabbage

106. $HCl + NaOH \rightarrow 'X' + H_2O$. 'X' in the reaction is
(A) NaCl
(B) 'NaH
(C) 'Cl$_2$O
(D) Na$_2$O

107. The acid present in spinach is
(A) Tannic acid
(B) Tartaric acid
(C) Ascorbic acid
(D) Oxalic acid

108. Which of the following is acidic in nature?
(A) caffeine
(B) soap
(C) vinegar
(D) lime water

109. Which of the following is used to make milk alkaline?
(A) lemon juice
(B) carbonic acid
(C) common salt
(D) baking soda

110. Which of the following is hydrated salt?
(A) table salt
(B) gypsum
(C) lime water
(D) baking powder

BIOLOGY

111. Which of the following are the sources of energy?
(A) carbohydrates and fats
(B) proteins and minerals
(C) both (A) and (B)
(D) none

112. A nutrient is
(A) an organic or inorganic substance
(B) necessary for the life of organisms
(C) needed for the survival of organisms
(D) all of these

113. Autotrophic mode of nutrition is
(A) making own food material by the organism
(B) using simple inorganic substances as raw materials
(C) found in green plants and certain bacteria
(D) all of these

114. Which of the following is heterotrophic mode of nutrition?
(A) saprophytic
(B) parasitism
(C) holozoic
(D) all

115. Oxygen gas is liberated in which process?
(A) photosynthesis
(B) respiration
(C) both
(D) none

116. Which of the following is the storage form of sugars in plants?
(A) glycogen
(B) glucose
(C) starch
(D) cellulose

117. In photosynthesis water is source of
(A) oxygen
(B) electrons
(C) protons
(D) all of these

118. Saprophyte obtain their food from
(A) sunlight
(B) green plants
(C) dead and decaying matter
(D) all of these

119. What is the effect of very high intensity of light on photosynthesis?
(A) slows down the rate of the reaction
(B) damages the chlorophyll
(C) both a. and b.
(D) none of these

120. The process of taking food into the body is
(A) ingestion
(B) nutrition
(C) diet
(D) none

121. What is the process of using absorbed food for energy, growth and repair by cells?
(A) digestion
(B) absorption
(C) assimilation
(D) respiration

122. Gastric glands of human digestive system are in
(A) stomach
(B) liver
(C) pancreas
(D) small intestine

123. What is the pH of the saliva?
(A) 6.8
(B) 5.6
(C) 8.6
(D) neutral

124. The movements that propel food into stomach include
(A) muscular movements
(B) peristaltic movements
(C) locomotory movements
(D) all

125. Human teeth
(A) covered by enamel
(B) are called thecodont
(C) made of ivory substance called dentine
(D) all of these

✍ *Wish you all the best* ✍