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TEST BOOKLET

TARA/SSC-HS/T1/04

NAME :

Time Allowed: Two Hours

Maximum Marks: 200

ROLL NO. :

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UN PRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.

2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C OR D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.

3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **Do NOT** write anything else on the Test Booklet.

4. This Test Booklet contains 200 items (Questions). Each item is printed in English and Hindi. Each item comprises FOUR responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response with you consider the best. In any case, choose **ONLY ONE** response for each item.

5. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See direction in the answers sheet.

6. All items carry equal marks.

7. Before you proceed to mark in the Answer sheet the response to various items in the Test booklet, you have to fill in some particulars in the answer sheets as per instruction sent to you with your Admission Certificate.

8. After you have completed filling in all responses on the answer sheet and the examination has concluded, you should hand over to Invigilator only the answer sheet. You are permitted to take away with you the Test Booklet.

9. Sheet for rough work are appended in the Test Booklet at the end.

10. Penalty for Wrong answers

THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE

(i). There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-fourth (0.25)** of the marks assigned to that question will be deducted as penalty.

(ii). If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.

(iii). If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

PART - A

INTELLIGENCE AND REASONING

Directions : (Q. 1 - 4) Select the related letters/word/number/figure from the given alternatives–

- 128 : 93 :: 244 : ?
 (a) 183 (b) 122
 (c) 138 (d) 302
- Newspaper : Press :: Cloth : ?
 (a) Tailor (b) Textile
 (c) Fibre (d) Mill
- Anaemia : Blood ; : Anarchy : ?
 (a) Lawlessness (b) Government
 (c) Monarchy (d) Disorder
- Find I and II in the relationship–
 I : Needle :: Chief ; II
 I– (E) Thread (F) Cloth
 (G) Doctor (H) Tailor
 II– (P) Food (Q) Knife
 (R) Chicken (S) Oven
 (a) GP (b) HQ
 (c) EQ (d) FR

Directions : (Q. 5 - 9) Select the one which is different from the other three responses–

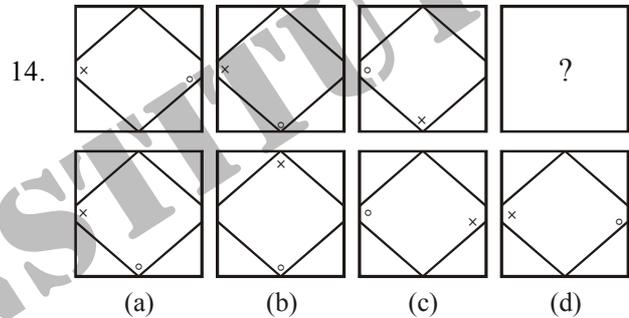
- (a) PNLJ (b) VTRP
 (c) JHFD (d) TQOM
- (a) CEHJ (b) DGIL
 (c) SUXZ (d) ACFH
- (a) E D H G (b) L K O N
 (c) U V W X (d) Q P T S
- (a) Sports-Ground (b) Cinema-Sceen
 (c) Drama-Stage (d) Rubber-Erase
- (a) 42 – 31 (b) 63 – 74
 (c) 85 – 96 (d) 36 – 52

Directions (10 - 13) : What will come in place of question mark (?) in the following number series ?

- 10 14 25 55 140 ?
 (a) 386 (b) 398
 (c) 388 (d) 396

11. 119 131 155 191 239 ?
 (a) 289 (b) 290
 (c) 279 (d) 299
12. 697 553 453 389 353 ?
 (a) 328 (b) 337
 (c) 362 (d) 338
13. 336 224 168 140 126 ?
 (a) 119 (b) 118
 (c) 116 (d) 121

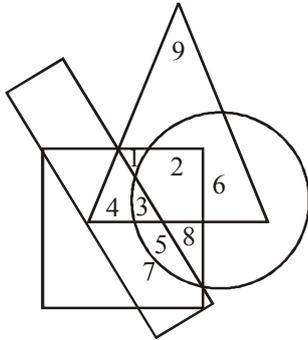
Directions : (Q. 14-17) A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series –



15. H J M Q ?
 (a) A (b) W
 (c) S (d) V
16. 6, 10, 18, 34, ?
 (a) 46 (b) 56
 (c) 66 (d) 76
17. N O A B O P B C P Q C D ? ? ? ?
 (a) Q R D E (b) R T E F
 (c) Q S D E (d) Q R G I
18. If 'BODY' is coded as 'DQFA', what is the code for 'MIGHT' ?
 (a) OKHTV (b) NJHIU
 (c) OKIJV (d) NJITU
19. In a certain code 'NICE' is coded as 14935. What would 6920 stand for ?
 (a) MIK (b) SIC
 (c) PUT (d) FIT



20. In the following diagram the triangle represents children, the circle represents rural population, the rectangle school going population and the square boys.



On the basis of above diagram, answer the questions, which number represents rural children who are not school going ?

- (a) 1 (b) 2
(c) 6 (d) 2, 6
21. Arrange the following in a logical order–
1. Poverty
 2. Population
 3. Death
 4. Unemployment
- (a) 1, 2, 3, 4 (b) 2, 1, 3, 4
(c) 2, 4, 1, 3 (d) 3, 4, 2, 1

22. From the given alternative words, select the word which **cannot** be formed using the letters of the given word.

PRONUNCIATION

- (a) RATION (b) PRONOUN
(c) PRINT (d) NATURAL
23. How many such pairs of letters are there in the given word each of which has as many letters between them in the word as in the English alphabet.

PARADISE

- (a) Nil (b) One
(c) Two (d) Three

Directions : (Q. 24-25) These consist of two statements followed by two conclusions numbered I and II. Take the two given statements to be true even if they seem absurd.

Give your answer as –

- (a) If only I follows
(b) If only II follows
(c) If neither I nor II follows
(d) If both I and II follow

24. **Statements :**

Some persons are educated.

Educated persons prefer small families.

Conclusions :

I. All small families are educated.

II. Some persons prefer small families

25. **Statements :**

All lamps are poles.

Some poles are pipes.

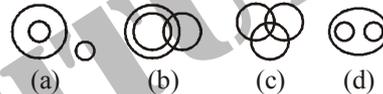
Conclusions :

I. Some lamps are pipes.

II. Some pipes are poles.

26. From the four logical diagrams, select the one which best illustrates the relationship among the three given classes in the questions.

Smart people, engineers, women



Directions : (Q. 27 and 28) Select the appropriate letter-number pair to replace the question marks and continue the series.

27.

A	22	I	12	?
26	E	18	O	?

- (a) $\frac{13}{P}$ (b) $\frac{15}{Q}$

- (c) $\frac{U}{6}$ (d) $\frac{6}{U}$

28.

4	5	7
7	8	4
11	12	?
462	480	224

- (a) 7 (b) 8
(c) 6 (d) 9

29. As 'BEGK' is related to 'ADFJ', similarly 'PSVY' is related to the following–

- (a) ORUX (b) ROUX
(c) LQUT (d) LOQT

30. If 'Cloud' is termed as 'White', 'White' as 'Rain', 'Rain' as 'Green', 'Green' as 'Air', 'Air' as 'Blue' and 'Blue' as 'Water', then the bird flies in which of the following ?

- (a) Cloud (b) White
(c) Rain (d) Blue



31. Choose the odd term in the following series :

3, 8, 15, 24, 34, 48, 63

- (a) 15 (b) 24
(c) 34 (d) 48

32. If 'Lead' is termed as 'Stick', 'Stick' as 'Nib', 'Nib' as 'Needle', 'Needle' as 'Rope', 'Rope' as 'Thread', then what would be the term for 'Nib' that would be used for writing ?

- (a) Sick (b) Nib
(c) Needle (d) Thread

Directions : (Q. 33 to 37) Read the following information attentively and answer the questions given below—

- P, Q, R, S, T and U are the members of a family.
- There are two married pairs in the family.
- Q is a trader and father of T.
- U is a teacher and grandfather of R.
- S is a house wife and grandmother of T.
- R is the daughter of P.

33. Who is the husband of P ?

- (a) R (b) U
(c) Q (d) None of these

34. Who is the sister of T ?

- (a) U (b) Q
(c) R (d) None of these

35. Who among the following are married couples ?

- (a) US and QP (b) US and RP
(c) US and QT (d) TS and RU

36. On the basis of profession, what is P ?

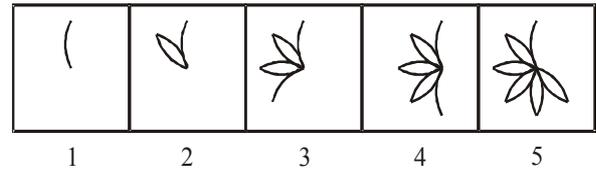
- (a) Cannot be determined (b) Engineer
(c) Student (d) Engineer or student

37. Which of the following groups consists inevitably of only men ?

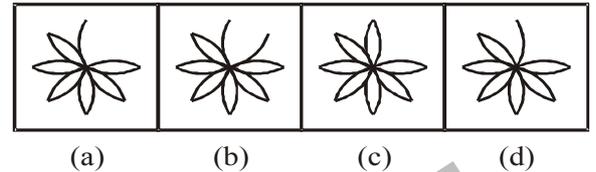
- (a) QU (b) QUT
(c) TU (d) QUR

Directions : (Q. 38 - 39) These consist of five figures marked (a), (b), (3), (d) and (5) called the Problem Figures followed by four other Figures marked (a), (b), (c) and (d) called the Answer Figures. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

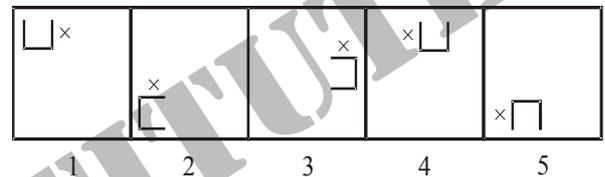
38. **Problem Figures**



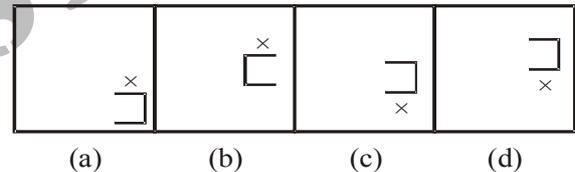
Answer Figures



39. **Problem Figures**



Answer Figures



40. Pointing to an old man, Kunal said, "His son is my son's uncle" How is the old man related to Kunal ?

- (a) Grandfather (b) Brother
(c) Father (d) Uncle

41. In a code language CENTRAL is written as LARTNEC. How will SEMINAR be written in the same code language ?

- (a) NARIMES (b) MESIRAN
(c) RANIMES (d) NARISPM

42. As 'Good' is related to 'Bad', identically 'Virtue' is related to which of the following ?

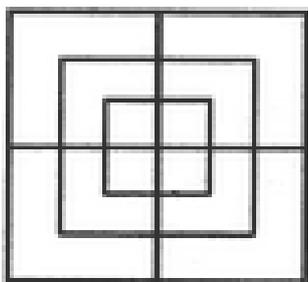
- (a) Blame (b) Cheat
(c) Despair (d) Vice

43. What fraction of an hour will pass between 4 : 56 p.m. and 5 : 32 p.m. ?

- (a) $\frac{1}{4}$ (b) $\frac{3}{4}$
(c) $\frac{3}{5}$ (d) $\frac{1}{2}$



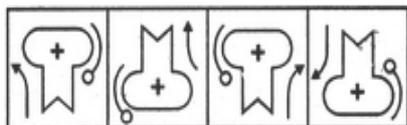
44. Raju ranks 10th from the top and Ravi ranks 21st from the bottom. If there are 3 students between them, how many students are there in the class ?
 (a) 34 (b) 33
 (c) 31 (d) 32
45. P is the father of T. T is the daughter of M. M. is the daughter of K. What is P to K ?
 (a) Father (b) Father-in-law
 (c) Brother (d) Son-in-law
46. A man walks 7 km towards north before taking left turn and walks further 5 km. Then he takes left turn and walks 15 km. Finally he takes left turn again and walks 5 km. How much distance is he away from the starting point ?
 (a) 8 km (b) 12 km
 (c) 15 km (d) 22 km
47. If '+' stands for division, '×' stands for multiplication, '÷' for addition; which one of the following equation is correct ?
 (a) $10 \div 5 + 4 = 6$ (b) $10 - 4 + 2 = 6$
 (c) $10 + 2 - 5 = 6$ (d) $10 + 2 \times 1 = 6$
48. How many squares are there in the given figure ?



- (a) 16 (b) 12
 (c) 17 (d) 15
49. Which of the answer figures is the right mirror image of the given question figure?

Question Figure

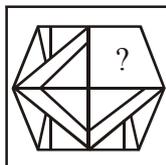
Answer Figures



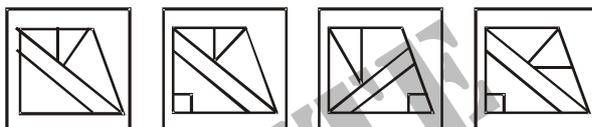
- (a) (b) (c) (d)

50. Which answer figure will complete the pattern in the question figure ?

Question Figure



Answer Figures



- (a) (b) (c) (d)

PART - B

GENERAL AWARENESS

51. Indian state with the largest electratorate is—
 (a) Bihar (b) UP
 (c) Karnataka (d) Rajasthan
52. Safety fuse wire used in domestic electrical appliances is made of metal of low—
 (a) Resistance (b) Melting point
 (c) Specific gravity (d) Conductance
53. The following particles move with same kinetic energy. Which of them has maximum momentum ?
 (a) Electron (b) Proton
 (c) Deuteron (d) Alpha Particle
54. A bottle of sodalime is grasped by the neck and swung briskly in a vertical circle. Near which portion of the bottle do the tubules collect ?
 (a) Near the bottom
 (b) In the middle of the bottom
 (c) Near the neck
 (d) Bubbles remain distributed uniformly
55. Which one of the following is called the 'Digestive bag' in the cell ?
 (a) Golgi body (b) Mitochondrion
 (c) Ribosome (d) Lysosome
56. Osteocytes are found in—
 (a) Bone (b) Blood
 (c) Cartilage (d) Lymph



57. With which one of the following sports is Fernando Alonso associated ?
 (a) Ferrari (b) Billiards
 (c) Snooker (d) Tennis
58. Which one of the following is the minimum amount paid (in rupees) to the workers under the National Rural Employment Guarantee Act?
 (a) ₹ 50 per day (b) ₹ 100 per day
 (c) ₹ 1,000 per month (d) ₹ 3,000 per month
59. Wing commander is a post related to ____
 (a) Navy (b) Army
 (c) Police (d) Air force
60. Members of SAARC countries does not include ____
 (a) Pakistan (b) Japan
 (c) Nepal (d) India
61. The magnitude of earthquake waves is measured on ____
 (a) wave scale (b) Richter's scale
 (c) Medic scale (d) full bright scale
62. Green Revolution relates to ____
 (a) production through pollution free methods
 (b) significant increase in agricultural productivity through high yield seeds etc.
 (c) educating the citizens for clean and green cities
 (d) high milk production
63. CAG is connected with
 (a) union budgets
 (b) state finances and irregularities
 (c) audit and related matters
 (d) checking expenditure of Government of India
64. Medical tourism is related to
 (a) cancer patients under-taking tours and travels
 (b) all patients going on a vacation
 (c) a tourist spot having primary health care facilities
 (d) a package covering travel, stay, medical treatment and the like
65. One of the following is a Tiger Reserve in India ____
 (a) Nilgiri (b) Badravati
 (c) Sariska (d) Latur
66. Lunar Eclipse ____
 (1) occurs only on a full moon day.
 (2) is when earth comes between Sun and Moon.
 (3) is when Moon comes between Sun and Earth.
 (4) occurs on a new moon day.
 (5) occurs every 15 days in different parts of the world.
 (a) (1) & (2)
 (b) (2) & (3)
 (c) (3) & (4)
 (d) (4) & (5)
67. Factoring ____
 (a) is an easy way of raising capital from a factoring company by small business.
 (b) is selling of account receivables on a contract basis for cash payment to a factor before it is due.
 (c) is an arrangement for raising short term money against prepaid expenses.
 (d) is a method of discounting of long term bills.
68. Kharif crops are ____
 (a) raised in the summer months of April to June.
 (b) sown in the beginning of winter and harvested before onset of summer.
 (c) potatoes-grams etc.
 (d) sown in summer and harvested after rain (period May to October).
69. The word sovereign in the context of 'Sovereign Republic' means ____
 (a) no concentration of power and money.
 (b) no regional disparity.
 (c) no partiality against any religion.
 (d) no room for a monarch.
70. The speed of a car is 54 km/hour. Its speed in metres per second is--
 (a) 15 m/s (b) 18 m/s
 (c) 20 m/s (d) 24 m/s
71. Which of the following is known as the graveyard of RBC ?
 (a) Liver (b) Spleen
 (c) Brain (d) Heart
72. Rheumatic heart disease is treated with help of--
 (a) Aspirin (b) Streptomycin
 (c) Methyl dopa (d) Penicillin



73. In the early Vedic period, Varna system was based on—
- (a) Education (b) Birth
(c) Occupation (d) Talent
74. The first Governor-General of Bengal was—
- (a) Lord Clive (b) Lord Warren Hastings
(c) Lord John Shore (d) Lord Cornwallis
75. Which three year period was observed as a 'Plan holiday' in the country ?
- (a) 1965-68 (b) 1966-69
(c) 1968-71 (d) 1969-72
76. Who issued firman granting Diwani of Bengal, Bihar and Orissa to the english ?
- (a) Ahmad Shah (b) Bahadur Shah
(c) Farrukh Siyar (d) Shah Alam II
77. Which one of the following Acts introduced communal electorate in India?
- (a) Indian Councils Act, 1861
(b) Indian Councils Act, 1892
(c) Indian Councils Act, 1909
(d) Government of India Act, 1935
78. Who founded the Fort William College at Calcutta?
- (a) Lord Cornwallis (b) Lord Ellenborough
(c) Lord Macaulay (d) Lord Wellesley
79. Where was the first Peasant Movement launched by Mahatma Gandhi ?
- (a) Bardoli (b) Dandi
(c) Champaran (d) Wardha
80. Who of the following was a founder of the Punjab Naujawan Bharat Sabha in 1926 ?
- (a) Lala Lajpat Rai (b) Sardar Bhagat Singh
(c) Lala Hardyal (d) Sohan Singh Bakhna
81. Which one among the following is nearest to the Tropic of Cancer ?
- (a) Patna (b) Ranchi
(c) Rourkela (d) Varanasi
82. Match List-I (*Type of Rocks*) with List-II (*Example*) and select the correct answer using the codes given below the Lists:
- List-I (Type of Rocks) List-II (Example)**
- A. Igneous Rocks 1. Basalt and Granite
B. Metamorphic Rocks 2. Limestone and Sandstone
C. Sedimentary Rocks 3. Marble and Quartzite
- Codes :**
- | | | | |
|-----|----------|----------|----------|
| | A | B | C |
| (a) | 1 | 2 | 3 |
| (b) | 1 | 3 | 2 |
| (c) | 2 | 3 | 1 |
| (d) | 3 | 1 | 2 |
83. In India, in which one of the following areas are the tropical evergreen forests found ?
- (a) The Western Ghats
(b) The Eastern Ghats
(c) The Western Himalaya
(d) The Central Himalaya
84. Match List-I (*Location*) with List-II (*Industry*) and select the correct answer using the code given below the Lists:
- | | | |
|----|--------------------------|----------------------------|
| | List-I (Location) | List-II (Industry) |
| A. | Moradabad | 1. Cotton Textile Industry |
| B. | Mathura | 2. Iron and Steel Industry |
| C. | Salem | 3. Oil Refinery |
| D. | Coimbatore | 4. Copper & Brass industry |
- Codes :**
- | | | | | |
|-----|----------|----------|----------|----------|
| | A | B | C | D |
| (a) | 4 | 3 | 2 | 1 |
| (b) | 4 | 2 | 3 | 1 |
| (c) | 1 | 3 | 2 | 4 |
| (d) | 1 | 2 | 3 | 4 |
85. Which one of the following towns is well-known for its aluminium industry ?
- (a) Coimbatore (b) Koraput
(c) Ranchi (d) Rourkela
86. At which one of the following towns do National Highways Nos. 6 and 7 cross each other?
- (a) Bhopal (b) Gwalior
(c) Jhansi (d) Nagpur
87. Which one of the following metals occurs in nature in free state ?
- (a) Gold (b) Sodium
(c) Aluminium (d) Copper
88. While Proclamation of Emergency is in operation, the term of the Lok Sabha can be extended for a period not exceeding?
- (a) Six weeks (b) Three months
(c) Six months (d) One year



89. Match List-I (*Place of Economic Importance*) with List-II (*State*) and select the correct answer using the code given below the Lists :
- | <i>List-I</i> | <i>List-II</i> |
|--------------------------------|----------------|
| (Place of Economic Importance) | (State) |
| A. Always | 1. Gujarat |
| B. Kaiga | 2. Jharkhand |
| C. Giridih | 3. Karnataka |
| D. Kakrapar | 4. Kerala |
- Codes :**
- | A | B | C | D |
|-------|---|---|---|
| (a) 1 | 2 | 3 | 4 |
| (b) 1 | 3 | 2 | 4 |
| (c) 4 | 2 | 3 | 1 |
| (d) 4 | 3 | 2 | 1 |
90. Which one of the following pairs is correctly matched?
- | UN Organisation | Headquarters |
|-----------------|--------------|
| (a) UNESCO | : Geneva |
| (b) IMF | : Paris |
| (c) ILO | : Washington |
| (d) UNIDO | : Vienna |
91. Where is Baikonur Cosmodrome located ?
- (a) Belarus (b) Kazakhstan
(c) Russia (d) Ukraine
92. Which one of the following plants yields bio-diesel and bio-fuel ?
- (a) Hevea braziliensis (b) Jatropha curcas
(c) Juniperus virginiana (d) Parthenium argentatum
93. Which one amongst the following is nearest to the Sun ?
- (a) Earth (b) Mars
(c) Mercury (d) Venus
94. How is Shobhana Chandrakumar well known as ?
- (a) Dancer (b) Environmentalist
(c) Educationist and a member of the National knowledge Commission
(d) Sports person
95. Which one among the following is not one of the G-4 group of countries that are aspiring for permanent membership in the Security Council of the United Nations?
- (a) Brazil (b) Germany
(c) Australia (d) Japan
96. Nokia-one of the leading cellular phone producers in the world originates from which one of the following countries ?
- (a) Japan (b) Sweden
(c) United States of America
(d) Finland
97. In the United Nations, who decides the quantum of contribution of each member to the income resources of the UN?
- (a) Trusteeship Council
(b) Economic and Social Council
(c) Security Council
(d) General Assembly
98. The height of the World's tallest tower, the 'Burj Dubai' (renamed 'Burj Khalifa') is—
- (a) 740 metres (b) 828 metres
(c) 848 metres (d) 903 metres
99. The number of Judges in the International Court of Justice is —
- (a) 11 (b) 15
(c) 18 (d) 7
100. Which of the inert gases can form compounds ?
- (a) Helium (b) Xenon
(c) Krypton (d) Argon

PART - C

NUMERICAL APTITUDE

101. A sum when lent out at simple interest $2\frac{1}{2}\%$ per annum amounts to Rs. 630 after 2 years. Find the sum—
- (a) Rs. 600 (b) Rs. 500
(c) Rs. 550 (d) Rs. 615
102. Out of a certain sum, $\frac{1}{3}$ rd is invested at 3%, $\frac{1}{6}$ th at 6% and the rest at 8%. If the simple interest for 2 years from all these investments amounts to Rs. 600, find the original sum—
- (a) Rs. 6000 (b) Rs. 5000
(c) Rs. 5500 (d) Rs. 6500
103. Sum of the digits of a two-digit number is 14. If 36 is added to this number, the digits of the number mutually change their places. Which of the two digits is smaller?
- (a) 4 (b) 5
(c) 6 (d) 7



104. Seema's present age is four times her son's present age and four-seventh of her father's present age. The average of the present ages of all three of them is 32 years. What is the difference between the Seema's son's present age and Seema's father's present age ?
 (a) 44 years (b) 48 years
 (c) 46 years (d) Cannot be determined
105. The ratio between the speed of a train and a car is 18 : 13 respectively. Also, a bus covered a distance of 480 kms. in 12 hours. The speed of the bus is five-ninth the speed of the train. How much distance will the car cover in 5 hours ?
 (a) 250 kms. (b) 280 kms.
 (c) 260 kms. (d) Cannot be determined
106. The total area of a circle and a square is equal to 2611 sq. cm. The diameter of the circle is 42 cms. What is the sum of the circumference of the circle and the perimeter of the square ?
 (a) 272 cms. (b) 380 cms.
 (c) 280 cms. (d) Cannot be determined
107. The largest and the second largest angles of a triangle are in the ratio of 13 : 12 respectively. The smallest angle is 20% of the sum of the largest and the second largest angles. What is the sum of the smallest and the second largest angles ?
 (a) 120° (b) 108°
 (c) 100° (d) 102°
108. Twenty five percent of Pranab's annual salary is equal to eighty percent of Surya's annual salary. Surya's monthly salary is forty percent of Dheeru's monthly salary. If Dheeru's annual salary is ₹ 6 lacs. What is Pranab's monthly salary ? (At some places annual income and in some place monthly income is given.)
 (a) ₹ 7.68 lacs (b) ₹ 56,000
 (c) ₹ 8.4 lacs (d) ₹ 64,000
109. Which country won second highest number of medals over all the years together ?
 (a) A (b) B
 (c) C (d) D
110. What was the **approximate** percent increase in number of medals won by Country - C in the year 2008 from the previous year ?
 (a) 234 (b) 134
 (c) 150 (d) 240
111. If 45 percent of the medals won by country - B in the year 2006 were gold medals, 10 percent were bronze and remaining were silver medals. What was the number of silver medals won by that country ?
 (a) 27 (b) 33
 (c) 43 (d) 37
112. Number of medals won by Country - E in the year 2007 was **approximately** what percentage of the number of medals won by Country -A in the year 2008 ?
 (a) 44 (b) 50
 (c) 54 (d) 64
113. One of the countries performance decreased consistently from the year 2005 to the year 2010. Which of the following is that country ?
 (a) A (b) B
 (c) C (d) D
114. If θ be an acute angle and $7 \sin^2\theta + 3 \cos^2\theta = 4$, then the value of $\tan \theta$ is
 (a) $\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$
 (c) 1 (d) 0
115. The minimum value of $2\sin^2\theta + 3\cos^2\theta$ is
 (a) 0 (b) 3
 (c) 2 (d) 1
116. If $A = \sin^2\theta + \cos^4\theta$, for any value of θ , then the value of A is
 (a) $1 \leq A \leq 2$ (b) $\frac{3}{4} \leq A \leq 1$
 (c) $\frac{13}{16} \leq A \leq 1$ (d) $\frac{3}{4} \leq A \leq \frac{13}{16}$

Directions (109-113) : Study the following table carefully to answer the questions that follow :

Number of medals won by five different countries in six different years

Year	COUNTRY				
	A	B	C	D	E
2005	120	45	135	65	64
2006	160	60	70	46	28
2007	142	102	46	43	110
2008	172	28	108	39	58
2009	90	64	56	25	64
2010	64	36	85	19	83

117. If $2\cos\theta - \sin\theta = \frac{1}{\sqrt{2}}$, ($0^\circ < \theta < 90^\circ$) the value of $2\sin\theta + \cos\theta$ is
 (a) $\frac{1}{\sqrt{2}}$ (b) $\sqrt{2}$
 (c) $\frac{3}{\sqrt{2}}$ (d) $\frac{\sqrt{2}}{3}$



118. If $\sin\theta + \operatorname{cosec}\theta = 2$, then the value of $\sin^5\theta + \operatorname{cosec}^5\theta$ when $0^\circ \leq \theta \leq 90^\circ$, is
- (a) 0 (b) 1
(c) 10 (d) 2
- Directions (119-123) : What will come in place of the question mark (?) in the following questions?**
119. $(5)^3 \times (25)^2 = (5)^? \times (125)^2$
- (a) 4 (b) 2
(c) 1 (d) 3
120. $(\sqrt{6} - 3)^2 = ? - \sqrt{216}$
- (a) $4\sqrt{6} + 15$ (b) $4\sqrt{6}$
(c) $15 - 4\sqrt{6}$ (d) 9
121. $5^2 \times 26 \div \sqrt{169} - 3^2 = ? - 4^2$
- (a) 65 (b) 57
(c) 55 (d) 67
122. $\sqrt{54 \times 5 + 150 + 21} = (?)^2$
- (a) 21 (b) $\sqrt{21}$
(c) 441^2 (d) 441
123. $7^2 \times 49^2 = 7^? \times 343$
- (a) 4 (b) 3
(c) 6 (d) 1
124. The respective ratio between the average speed of a car, a train and a tractor is 3 : 6 : 1. The average speed of the train is six times the average speed of the tractor which covers 175 kms in 7 hours. What is the sum of the speed of car and train together ?
- (a) 225 km/hr (b) 215 km/hr
(c) 250 km/hr (d) Cannot be determined
125. The area of a square is three times the area of a rectangle. The length of the rectangle is 5 cms more than $(5)^2$ which is three times its breadth. What is the perimeter of the square?
- (a) 240 cms. (b) 60 cms.
(c) 120 cms. (d) Cannot be determined
126. How many bags are required for filling 1824 kgs of wheat if each bag is filled with 152 kgs of wheat ?
- (a) 18 (b) 13
(c) 8 (d) 12
127. The sum of five consecutive even numbers is equal to 300. What is the sum of the second largest number amongst them and the square of the number which is exactly in middle amongst them ?
- (a) 3568 (b) 3658
(c) 3660 (d) 3662
128. In a test, minimum passing percentage for girls and boys is 30% and 40% respectively. A boy scored 480 marks and failed by 160 marks. What are the minimum passing marks for girls ?
- (a) 420 (b) 400
(c) 480 (d) 640
129. Rajiv's monthly income is three-fifth Reena's monthly income. Reena's monthly income is ₹ 32,000/-. What is average monthly income of Rajiv and Reena together?
- (a) ₹ 25,600 (b) ₹ 26,500
(c) ₹ 24,500 (d) ₹ 22,500
130. 8 women and 3 boys can complete a piece of work in 15 days. In how many days will 12 women and two boys complete the same piece of work ?
- (a) 12 (b) 6
(c) 8 (d) Cannot be determined
131. The marks of six boys in a group are 148, 159, 187, 137, 178 and 157. What are the average marks of all six boys?
- (a) 151 (b) 164
(c) 161 (d) 153
132. The ratio of the present ages of Meena and Fiona is 16:13 respectively. Four years ago the respective ratio of their ages was 14 : 11. What will be Fiona's age four years from now ?
- (a) 28 years (b) 32 years
(c) 26 years (d) 30 years
133. The cost of building a fence around a circular field is ₹ 7,700 @ ₹ 14 per foot. What is the area of the circular field?
- (a) 24062.5 Sq. ft. (b) 23864.4 Sq. ft.
(c) 24644.5 Sq. ft. (d) Cannot be determined
134. The digit in the unit's place of a three digit number is thrice the digit in the ten's place and the digit in the hundred's place is two-third of the digit in the ten's place. If the sum of the three digits of the number is 14, what is the three digit number ?
- (a) 932 (b) 239
(c) 326 (d) Cannot be determined



135. Gina invests ₹ 48,000 to start a business. 4 months later Shrayon joins her by investing ₹ 62,000 and another two months later Deepika joins them both by investing ₹ 80,000. At the end of one year the business earns a profit of ₹ 20,661. What is Deepika's share in the profit ?
 (a) ₹ 7,668 (b) ₹ 6,603
 (c) ₹ 7,240 (d) ₹ 6,390
136. The length of a chord of a circle is equal to the radius of the circle. The angle which this chord subtends in the major segment of the circle is equal to
 (a) 30° (b) 45°
 (c) 60° (d) 90°
137. ABCD is a square. M is the mid-point of AB and N is the mid-point of BC. DM and AN are joined and they meet at O. Then which of the following is correct ?
 (a) $OA : OM = 1 : 2$ (b) $AN = MD$
 (c) $\angle ADM = \angle ANB$ (d) $\angle AMD = \angle BAN$
138. Two chords AB and CD of circle whose centre is O, meet at the point P and $\angle OAC = 50^\circ$, $\angle BOD = 40^\circ$. Then the value of $\angle BPD$ is
 (a) 60° (b) 40°
 (c) 45° (d) 75°
139. One chord of a circle is known to be 10.1 cm. The radius of this circle must be :
 (a) 5 cm (b) greater than 5 cm
 (c) greater than or equal to 5 cm
 (d) less than 5 cm
140. A man sold a wristwatch for ₹2,400/- at a loss of twenty five percent. At what rate should he have sold the wristwatch to earn a profit of twenty five percent?
 (a) ₹ 3,600 (b) ₹ 4,000
 (c) ₹ 3,500 (d) ₹ 3,800
141. The average of five numbers is 56. If the average of first four numbers is 54, what is the value of the fifth number ?
 (a) 68 (b) 72
 (c) 56 (d) 64
142. If a number is added to seven-ninth of thirty five percent of 900, the value so obtained is 325. What is the number ?
 (a) 60 (b) 120
 (c) 90 (d) 80
143. The ratio between the three angles of a quadrilateral is 1 : 4 : 5 respectively. The value of the fourth angle of the quadrilateral is 60° . What is the difference between the value of the largest and the smallest angles of the quadrilateral ?
 (a) 120° (b) 90°
 (c) 110° (d) 100°
144. There are two circles of different radii. The area of a square is 196 sq.cms. whose side is **half** the radius of the larger circle. The radius of the smaller circle is three-seventh that of the larger circle. What is the circumference of the smaller circle ?
 (a) 12π cms (b) 16π cms
 (c) 24π cms (d) 32π cms
145. The ratio between the angles of a quadrilateral is 3 : 4 : 6 : 7 **Half** the second largest angle of the quadrilateral is equal to the smaller angle of a parallelogram. What is the value of adjacent angle of the parallelogram?
 (a) 136° (b) 126°
 (c) 94° (d) 96°
146. Arun ordered 15 chapattis, 4 plates of rice, 6 plates of mixed vegetable and 5 ice-cream cups. The cost of one chapatti is ₹ 5, one plate of rice is ₹ 50 one plate of mixed vegetable is ₹ 75 and one ice-cream cup is ₹ 20. How much amount did Arun pay to the cashier?
 (a) ₹ 850 (b) ₹ 795
 (c) ₹ 825 (d) ₹ 750
147. A man crosses a stationary bus in 18 seconds. The same bus crosses a pole in 4 seconds. What is the respective ratio between the speed of the bus and speed of the man?
 (a) 9 : 2 (b) 9 : 4
 (c) 18 : 5 (d) Cannot be determined
148. In an exam Ritiz scored 52 percent marks, Sunil scored 64 percent marks and Ravi scored 74 percent of marks. The maximum marks of the exam are 750. What are the average marks scored by all the three boys together?
 (a) 475 (b) 485
 (c) 450 (d) 490
149. In a class, there are 80 students who study both computer Science and Electronics. While 100 students study Computer Science, 120 students study Electronics. How many of them study Computer Science only ?
 (a) 100 (b) 40
 (c) 180 (d) 20
150. Find the least number of 3 digits, which is exactly divisible by 14—
 (a) 112 (b) 100
 (c) 114 (d) None of these



PART - D

ENGLISH COMPREHENSION

Directions: In questions no. 151 to 155, some of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the rectangle corresponding to the appropriate letter (A, B, C). If a sentence is free from errors, blacken the rectangle corresponding to (d) in the Answer Sheet.

151. (a) The retiring principal asked his old pupils
(b) to take the interest in the school
(c) after he has retired.
(d) No error.
152. (a) At present juncture
(b) however, the supercomputer
(c) would be a costly toy.
(d) No error.
153. (a) Troy was taken by Greeks
(b) this formed the basis of a story
(c) which has become famous.
(d) No error.
154. (a) Sixty miles (b) are
(c) a good distance. (d) No error.
155. (a) You must (b) remember me
(c) to post this letter. (d) No error.

Directions: In questions no. 156 to 160, sentences are given with blanks to be filled in with an appropriate word. Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate rectangle in the Answer Sheet.

156. Gokhale's patriotic speeches _____ people to dedicate their lives to the nation.
(a) forced (b) inspired
(c) instigated (d) prompted
157. In his address to the teachers, the Vice-Chancellor _____ certain measures being taken for improving the quality of college education.
(a) declined (b) directed
(c) advised (d) highlighted
158. The problems that India's economic development faces are _____.
(a) myopic (b) dubious
(c) enormous (d) strong

159. In our zeal for progress we should not _____ the executive with more powers.
(a) avoid (b) arm
(c) give (d) enhance
160. Undoubtedly, English is the most _____ spoken language in the world today.
(a) elaborately (b) greatly
(c) widely (d) broadly

Directions: In questions no. 161 to 165, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

161. PERSUADE
(a) assure (b) opinionated
(c) convince (d) cheat
162. FORTIFY
(a) topple (b) destroy
(c) reproduce (d) strengthen
163. PHENOMENAL
(a) incidental (b) eventful
(c) natural (d) extraordinary
164. PARADIGM
(a) solution (b) model
(c) discovery (d) invention
165. HONORARY
(a) honest (b) dignified
(c) unpaid (d) praiseworthy

Directions: In question no. 166 to 170, out of the four alternatives, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

166. CELIBATE
(a) reprobate (b) prodigal
(c) profligate (d) married
167. OBSOLETE
(a) rare (b) useless
(c) recent (d) conducive
168. MAGNANIMOUS
(a) small (b) generous
(c) naive (d) selfish
169. EVACUATE
(a) admit (b) emerge
(c) abandon (d) invade
170. SANGUINE
(a) bloody (b) thin
(c) happy (d) gloomy



Directions: In questions no. 171 to 175, four alternatives are given for the meaning of the given Idiom/phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark in the Answer Sheet.

171. *Dog in the manger*
 (a) A person who is not liked by others
 (b) A person who is hounders
 (c) A person who puts himself in a difficulty on account of other people
 (d) A person who prevents others from enjoying something useless to himself
172. I saw him *make a wry face*.
 (a) abuse (b) feel sick
 (c) cry with pain (d) show disappointment
173. *Stick to one's guns*
 (a) Maintain one's stand under attack
 (b) Suspect something
 (c) Make something fail
 (d) Be satisfied
174. *To cut the crackle*
 (a) to stop talking and start
 (b) to dig a well
 (c) to annoy others
 (d) to act in a friendly way
175. *To miss the boat*
 (a) to miss an opportunity
 (b) to feel lonely
 (c) to act like a coward
 (d) to swim in a river

Directions: In questions no. 176 to 180, a sentence or underlined part thereof is given which may need improvement. Alternatives are given at (a), (b) and (c) below, which may be a better option. In case no improvement is needed, your answer is (d). Darken the appropriate rectangle in the Answer Sheet.

176. In fact, if it hadn't been for his invaluable advice on so many occasions I wouldn't have achieved anything in life.
 (a) remarkable advice
 (b) valuable advices
 (c) priceless suggestion
 (d) No improvement

177. But in all these cases conversion from scale have well-formulated.
 (a) can be well-formulated
 (b) are well-formulated
 (c) well-formulated
 (d) No improvement
178. There is dearth of woman doctor in our state. We shall have to recruit some from the other states.
 (a) women doctor
 (b) woman doctors
 (c) women doctors
 (d) No improvement
179. If you cross the line you will be disqualified.
 (a) cross upon the line
 (b) cross on the line
 (c) cross out the line
 (d) No improvement
180. He should move on to the next point, and not harp one sting only.
 (a) harp on string only
 (b) harp only one string
 (c) harp upon one string only
 (d) No improvement

Directions: In questions no. 181 to 185, out of four alternatives, choose the one which can be substituted, for the given words/sentence and indicate it by blackening the appropriate rectangle in the Answer Sheet.

181. A massive moving entity
 (a) miasma (b) juggernaut
 (c) jamboree (d) typhoon
182. A happening that cannot be altered
 (a) invincible (b) fate
 (c) fait-accomplis (d) congruence
183. A person with good artistic taste
 (a) gourmet (b) gourmand
 (c) connoisseur (d) judge
184. A flirting woman
 (a) virago (b) shrew
 (c) martinet (d) coquette
185. Forcefully enlisting private property for military use
 (a) occupation (b) commandeering
 (c) trespass (d) encroachment



Directions: In question no. 186 to 190, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

186. (a) Velnerable (b) Vulnarable
(c) Vulnerable (d) Valnerable
187. (a) Simpial (b) Bannar
(c) Pattren (d) Modern
188. (a) Scripher (b) Scripture
(c) Skripture (d) Scriptur
189. (a) Comitte (b) Commitee
(c) Committee (d) Comiittee
190. (a) Friming (b) Burnning
(c) Running (d) Fryng

Directions: In the following passage (question no. 191 to 200), some of the words have been left out. First read the passage over and try to understand what is about. Then fill in the blanks with the help of the alternatives given. Mark your answer in the Answer Sheet.

PASSAGE(Q. Nos.191-200)

Architecture is unique ...(191)... of art and science that has ...(192)... out of man's primary need for shelter. It is concerned with the design and ...(193)... of buildings in their sociological, technological and environmental context. This field is not only ...(194)... but also provides the ...(195)... of designing and building pleasing ...(196)... refined structures to serve

various needs. ...(197)... the fairly large number of practising architects, the countrywide ...(198)... in building activity offers scope for more. And though the initial earnings in the field are relatively ...(199)... what you make thereafter will depend entirely on your ...(200)...

191. (a) procedure (b) process
(c) portion (d) blend
192. (a) drifted (b) fizzled
(c) contrived (d) arisen
193. (a) painting (b) construction
(c) decoration (d) repairing
194. (a) fatiguing (b) strenuous
(c) encouraging (d) vast
195. (a) satisfaction (b) facility
(c) infrastructure (d) amenities
196. (a) practically (b) ideologically
(c) aesthetically (d) principally
197. (a) Considering (b) Having
(c) Assuming (d) Despite
198. (a) variation (b) slack
(c) lethargy (d) spurt
199. (a) escalating (b) modest
(c) unpredictable (d) negligible
200. (a) ambition (b) appearance
(c) expectation (d) experience

