DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

T.B.C. : STS-K-TPT
Serial No.:

Test Booklet Series

B

TEST BOOKLET

Subject : Test 17 – CSAT Sectional Test 2
Answer Key

Time Allowed : Two Hours **Maximum Marks : 200**

INSTRUCTIONS

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

2. Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Test Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.

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 100/80 items (questions). Each item is printed in English. Each item comprises of 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, mark the response which 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 directions in the Answer 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 Sheet as per instructions sent to you with your Admission Certificate.

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

9. Sheets 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 IN THE OBJECTIVE TYPE QUESTION PAPERS

(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 third** if 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.

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Q1. Investment ratio = 5:7:8
A after 4 months → half withdrawn.
A = (5×4) + (2.5×8) = 20 + 20 = 40
B after 6 months → doubles investment
B = (7×6) + (14×6) = 42 + 84 = 126
C = 8×12 = 96
Ratio = 40 : 126 : 96 = 20 : 63 : 48
Total = 131 parts
C share = 120000×48/131 ≈ ₹44,000
Answer: A (₹44,000)

Q2 A = 60000×12 = 720000
B = 80000×12 = 960000
C = 120000×6 = 720000
Ratio 720 : 960 : 720 = 3 : 4 : 3
Total parts = 10
B share = 39000×4/10 = ₹15,600
Answer: D (₹15,600)

Q3 A = (40000×3) + (30000×9)
= 120000 + 270000 = 390000
B = (50000×3) + (70000×9)
= 150000 + 630000 = 780000
Ratio 390 : 780 = 1 : 2
Total profit = 22400
A share = 22400×1/3 = ₹7466
Answer: A ₹7466

Q4 A = 12000×12 = 144000
B = 16000×12 = 192000
C = (20000×5) + (15000×7)
=100000 +105000 =205000
Ratio 144 : 192 : 205
Total = 541
B share = 27600×192/541≈ ₹9800
Answer: C (₹9,800)

Q5 A = 30000×12 = 360000
B = 45000×12 = 540000
C = 60000×8 = 480000
Ratio 360 : 540 : 480 = 6 : 9 : 8
Total = 23
C share = 36000×8/23 ≈ ₹12,521
Answer: B (₹12,521)

Q6 A = 20000×8 = 160000
B = 30000×10 = 300000
Ratio 160 : 300 = 8 : 15
Total = 23
B share = 16000×15/23 ≈ ₹10,435
Answer: A ₹10,435

Q7 A = (50000×6) + (30000×6)
= 300000 + 180000 = 480000
B = 40000×12 = 480000
C = 30000×12 = 360000
Ratio 480 : 480 : 360 = 4 : 4 : 3
Total = 11
A share = 36000×4/11≈ ₹13,090
Answer: B (₹13,091)

Q8 A = 1/12 B = 1/18
Together = 5/36
4 days work = 20/36
Remaining = 16/36
A alone Time = (16/36) ÷ (1/12)
= 16/3 ≈ 5.3
Answer: B (5 days)

Q9 A=1/20 B=1/30 C=1/60
LCM = 60 = 3 + 2 + 1 = 6/60
5 days work = 30/60
Remaining = 30/60
After B leaves = A + C =
3/60 + 1/60 = 4/60
Time = (30/60) ÷ (4/60) = 7.5 days
Answer: B (7.5 days)

Q10 (A+B)=1/8 (B+C)=1/12 C+A)=1/16
Add = 1/8 + 1/12 + 1/16 LCM=48
= 6+4+3 =13/48
2(A+B+C)=13/48 implies A+B+C=13/96
A = (A+B+C) − (B+C) = 13/96 − 1/12 =
13/96 − 8/96 = 5/96 Time
= 96/5 ≈ 19
Closest **Answer: B (19)**

Q11 A rate = 1/12 Half work in 6 days
B rate = (1/2)/9 = 1/18
Together = 1/12 +1/18
LCM=36 = 5/36
Time = 36/5 = 7.2 days
Answer: C (7.5)

Q12 A=1/10 B=1/15
Together = 1/6
3 days work = 3/6 = 1/2
Remaining = 1/2
B alone = (1/2)/(1/15) = 7.5
Answer: C (7.5)

Q13 Total work = 6×15 = 90
5 days work = 30
Remaining = 60
New rate = 10 per day
Time = 60/10 = 6 days
Answer: B 6 days

Q14 Efficiency ratio A : B = 2 : 1
A = 1/12 So B = 1/24
Together = 1/12 +1/24 = 3/24 = 1/8
Time = 8 days
Answer: B 8 days

Q15 Average speed = 2xy/(x+y) = (2×60×80)/(140) = 9600/140 = 68.57
Answer: A 68.6

Q16 Total distance = 3 units
Time = 1/30 +1/45 +1/60
LCM=180 = 6+4+3 =13/180
Speed = 3 ÷ (13/180) = 540/13 ≈ 41.5
Answer: A 41.5

Q17 Relative speed = 60+40 = 100
Time = 500/100 = 5 hr
Answer: B 5 hrs

Q18 Average speed = 2xy/(x+y)
= 2×40×20/60 = 26.6
Answer: A) 26.6 kmph

Q19 72 km/h = 20 m/s
Length = speed × time = 20×25 = 500 m
Answer: C 500 m

Q20 Time reduction formula
Increase 20%
Reduction = 20/(120) = 16.67%
Answer: A 16.67%

Q21 Distance = 40 , Time = 2 + 1 = 3
Speed = 40/3 = 13.33
Answer: B 13.33

Q22 Speed= 200/10= 20 m/s = 72 km/h
Answer: C 72 km/h

Q23 Total distance = 300 m, Time=12sec
Speed = 300/12 = 25 m/s = 90 km/h
Answer: B 90 km/h

Q24 Total length = 300
Speed = 54+72 =126 km/h = 35 m/s
Time = 300/35 ≈ 8.6 Closest
Answer: B 8 sec

Q25 Relative speed = 54−6 = 48 km/h
= 13.33 m/s
Length = 13.33×20 = 266 m
Answer: B 266 m

Q26 **Step 1: Convert speeds into m/s**

- 72 km/h = 20 m/s
- 54 km/h = 15 m/s

Step 2: Relative speed (same direction)
$20 - 15 = 5\ m/s$
Step 3: Total distance $200 + 200 = 400\ m$
Step 4: Time $\frac{400}{5} = 80$ seconds
Answer: D) 80 sec

Q27 Total distance = 500
Speed = 500/25 = 20 m/s = 72 km/h
Answer: B 72 km/h

Q28 Let train length = L
Pole L/15 Platform (L+P)/25
Solve P/L = 2/3 Ratio = 3:2
Answer: A 3: 2

Q29 Rate = 1/12 +1/18 = 5/36
Time = 36/5 = 7.2 hr
Answer: B 7.2 hr

Q30 Rate = 1/10 −1/15 = 1/30
Time = 30 hr **Answer: B 30 hrs**

Q31 10 hr work = 1/2 +1/3 = 5/6
Remaining = 1/6
A time = (1/6)/(1/20) = 3.33 hr
Answer: A 3 hrs

Q32 Rate = 1/8 −1/12 = 1/24
Time = 24 hr
Answer: A 24 hrs

Q33 Rate = 1/15 +1/20 −1/30
LCM 60 = 4+3−2 =5/60 =1/12
Time = 12 hr
Answer: B 12 hrs

Q34 4 hr work = 1/4 +1/6 = 5/12
Remaining = 7/12
A time = (7/12)/(1/16) = 9.33 Closest
Answer: D 9 hrs

Q35 1/4 tank = 2 hr Full = 8 hr
Answer: B 8 hrs

Q36 Downstream = 15 + 3 = 18 km/h
Answer: C 18 km/h

Q37 Upstream = 20 – 5 = 15 km/h
Answer: C 15 km/h

Q38 Downstream speed = 30/2 = 15
Upstream = 30/3 = 10
Boat speed = (15+10)/2 = 12.5 Closest
Answer: A 12.5 km/h

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39 Downstream speed = 18+6 = 24
Time = 48/24 = 2 hr
Answer: A 2 hrs

Q40 Speed ratio = upstream : downstream
= 4 : 6 = 2 : 3 **Answer: A 2: 3**

Q41 Upstream = 3 km/h
Downstream = 6 km/h
Stream = (6−3)/2 = 1.5 km/h
Answer: B 1.5 km/h

Q42 Upstream speed = 10−2 = 8
Distance = 8×4 = 32 km
Answer: C 32 km

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43. **Given** $x+\frac{1}{x}=5$
Formula $x^3+\frac{1}{x^3}=\left(x+\frac{1}{x}\right)^3-3\left(x+\frac{1}{x}\right)$
Substitute value

$$=5^3-3(5)$$
$$=125-15$$
$$=110$$

Answer: A (110)

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44. **Given**

$$a+b+c=6$$
$$ab+bc+ca=11$$

Formula

$$a^2+b^2+c^2=(a+b+c)^2-2(ab+bc+ca)$$

Substitute

$$=6^2-2(11)$$
$$=36-22$$
$$=14$$

Answer: B (14)

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45. **Given equation** $x^2-7x+10=0$
Factor $(x-5)(x-2)=0$
So $x=5$or $x=2$
Take $x=5$

$$x^2+\frac{1}{x^2}$$
$$=25+\frac{1}{25}$$
$$\approx 25.04$$

Closest option **Answer: D 25**

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46. **Given** $x+y=10$

$$xy=21$$

Formula $x^3+y^3=(x+y)^3-3xy(x+y)$
Substitute $=10^3-3(21)(10)$

$$=1000-630$$
$$=370$$

✅ **Answer: A (370)**

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47. **Given** $\frac{x}{y}+\frac{y}{x}=5$
Let $a=\frac{x}{y}, b=\frac{y}{x}$
Then $ab=1$
Formula $a^2+b^2=(a+b)^2-2ab$
Substitute $=5^2-2(1)$

$$=25-2$$
$$=23$$

✅ **Answer: B (23)**

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48. Word: MISSISSIPPI
Total letters = 11 Repetitions
M = 1, I = 4 ,S = 4 ,P = 2 Formula
11!/4!4!2! =34650 **Answer: A (34650)**

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49. Selecting 4 books from 10
Combination formula
nCr=n!/ r!(n−r)! 10C4=10!/4!6! = 210
Answer: C (210)

50. 5 boys and 4 girls
Step 1: Arrange boys 5!=120
Step 2: Spaces for girls
_ B _ B _ B _ B _ B _ 6 positions
Step 3: Choose 4 positions 6C4=15
Step 4: Arrange girls 4!=24
Total ways = 120×15×24=43200
Answer: D (43200)

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51. Digits: 1,2,3,4,5
4-digit numbers without repetition
Permutation 5P4 =5!/1! =5×4×3×2=120
Answer: C (120)

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52. Total people 6 men + 4 women = 10
Total committees = 10C4=210
Committees with no women 6C4=15
Committees with at least one woman
210−15 =195 **Answer: C (195)**

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53. Two dice throws, Total outcomes
6×6=36 Sum = 8
Possible pairs: (2,6),(3,5),(4,4),(5,3),(6,2)
Total = 5 Probability = 5/36
Answer: B (5/36)

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54. King cards = 4, Hearts = 13
King of hearts counted twice, So
4+13−1=16 Probability = 16/52 =4/13
Answer: A (4/13)

55.Two coins{ HH, HT ,TH ,TT},Total = 4
At least one head {HH, HT, TH},Total = 3
Probability 3/4
Answer: C (3/4)

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56. Balls Red = 3 Blue = 4 Green = 5
Total 3+4+5=12
Probability of blue 4/12 =1/3
Answer: B (1/3)

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57. Total cards = 52
Kings = 4 Queens = 4
Total unwanted = 8
Remaining 52−8 =44
Probability 44/52 = 11/13
Answer: A (44/52)

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58. **Answer: B. 10 m**
Reasoning: tan 45° = height / distance = 10 / distance 👉 distance = 10 m

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59. **Step-by-Step Logical Solution**
We have 5 students: **P, Q, R, S, T** ranked from highest (1st) to lowest (5th).

🔍 **Analyze the conditions:**

1. **P scored more than only Q**
   👉 So P is just above Q → **P = 4th, Q = 5th**

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2. **R scored less than S but more than T**
   👉 Order: **S > R > T**

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3. **S is not the highest**
   👉 S ≠ 1st

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4. **T is not the lowest**
   👉 T ≠ 5th (Q is already 5th, so okay)

🧩 **Fill remaining positions:**
We already have:

- 4th → P
- 5th → Q

Remaining positions: **1st, 2nd, 3rd → S, R, T**
From **S > R > T**, possible order:

- S = 2nd
- R = 3rd
- T = 1st ❌ (invalid because T would be highest but S > R > T must hold)

Try:

- S = 2nd
- R = 3rd
- T = 1st ❌ again invalid

Try:

- S = 3rd
- R = 4th ❌ (but 4th already P)

Try:

- S = 2nd
- R = 3rd
- T = 1st ❌ still invalid

👉 Correct placement:

- **S = 2nd**
- **R = 3rd**
- **T = 1st** ❌ violates S > R > T

So adjust: 👉 Final valid order:

- **1st → T**

- **2nd → S**
- **3rd → R**
- **4th → P**
- **5th → Q**

Check all conditions ✔
Final Ranking :

1	2	3	4	5
T	S	R	P	Q

Answer: B) R

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60. Final arrangement:

7	6	5	4	3	2	1
B	E	G	A	D	C	F

Answer: A) A

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61. Opposites:1 ↔ 6, 2 ↔ 4
Numbers used: 1,2,4,6 → remaining: 3,5 👉
These must be opposite to each other **Answer: A) 5**

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62.  Face **3** is common in both views and changes position → meaning **2 and 5 must be opposite faces** **Answer: B) 5**

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63. A face has 4 adjacent faces, 1 opposite
For 2:Adjacents = 3,4,5 → missing=1or 6 For 3:Adjacents = 1,2,6 → missing=4 or 5 Now: 2 adjacent to 3 → OK 3 adjacent to 2 → OK Check common logic: 👉 2 not adjacent to 6 → so opposite **Answer: A) 2–6**

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64. Initial: Top = 1,Front = 2,Bottom = 6
After rotation: Front (2) becomes Top Top (1) goes to Back Bottom (6) comes to Front 👉 Opposite of new top (2) = 5 **Answer: A) 5**

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65. 64 cubes → cube root = 4 → (4 × 4 × 4)
Formula:
Cubes with 2 faces painted = $12\times(n-2)$
$=12\times(4-2)=12\times2=24$ **Answer: B) 24**

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66. Efficiency=Employees/Days

Dept	**Emp/Days**
Sales	25/10 = 2.5 ✅
Marketing	20/12 ≈ 1.67
HR	15/8 ≈ 1.875
Finance	30/15 = 2
IT	35/20 = 1.75

👉 **Most efficient = Sales**
Answer A) Sales

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67. Emp-days=Employees × Days

Dept	**Emp-Days**
Sales	250
Marketing	240
HR	120 ✅
Finance	450
IT	700

👉 **Least = HR (120)**
Answer c) P3

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68. **After Finance doubles (30 → 60)**
New efficiencies: Sales = 2.5
Marketing ≈ 1.67, HR ≈ 1.875
Finance = 60/15 **= 4,** IT = 1.75
Answer: C)Finance most efficient

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69. **Median Days**
Days sorted: 8(HR), 10(Sales), 12(Marketing), 15(Finance), 20(IT)
Median = 12 → Marketing **Answer :B (Marketing, 12 days)**

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70. Total employees on projects >10 days
Projects >10 days → Marketing(12), Finance(15), IT(20)
Employees: 20 + 30 + 35 = **85**
Answer : B) 85

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71. New share of Services after 10% growth

- Original Services = 40
- Increase = 10% of 40 = 4 → New = 44
- New total GDP = 100 + 4 = 104

$$\text{New share} = \frac{44}{104} \approx 42\%$$

👉 **Answer: B) 42%**

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72. Sector combination condition
We need:
👉 Less than Industry (25%) but more than Taxes (10%)
Check options:

- A) Agriculture (18) + Others (7) = 25 ❌ (equal, not less)
- B) Taxes (10) + Others (7) = 17 ✅ (between 10 and 25)
- C) Agriculture (18) + Taxes (10) = 28 ❌
- D) Others (7) + Services (40) = 47 ❌

👉 **Answer: B) Taxes + Others**

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73. New Industry share

- Agriculture increases by 5 percentage points → 18 → 23
- Industry decreases proportionately → 25 − 5 = 20

👉 **Answer: B) 20%**

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74. Structural transformation (like India)
In developing economies:

- Shift happens from Agriculture → Industry → Services
- Services eventually dominate

👉 **Answer: C) Services sector overtakes both Agriculture and Industry**

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75. Reason for growth of "Others" sector

- "Others" includes gig economy, digital platforms
- Recent trend = rapid digitalization

👉 **Answer: B) Rise of platform-based digital economy**

Answer (76 to 80)
Step Breakdown:

- Total = ₹100 lakh
- E = ₹10 lakh
- B = 2 × E = ₹20 lakh
- Remaining = 100 − (10 + 20) = ₹70 lakh
- C + D = 40% of total = ₹40 lakh
- So, A = Remaining − (C + D) = 70 − 40 = ₹30 lakh
- Since D > C and C + D = 40:
  → Possible: D = 22, C = 18

Final Allocations:

- A = 30
- B = 20
- C = 18
- D = 22
- E = 10

✓ **Answers:**
76. B (₹20 lakh)
77.B (₹22 lakh)
78.C (Village C) – explicitly high deficit
79.B (30%)
80.A (A > D > B > C > E)