JEE Main 2020 Paper 2B (B.Planning) Sep 1 Shift 2 Question Paper

Conducted by the National Testing Agency (NTA)

Time Allowed: 3 Hours **B.Planning** **Maximum Marks: 400**

General Instructions

(i) This is **Paper 2B (B.Planning)** of **JEE (Main) 2020**, conducted by the National Testing Agency on **1 Sep 2020**.

(ii) The paper contains **100 questions**; attempt **100** as specified in the section table. The maximum score is **400 marks**.

(iii) Multiple choice questions have four options. Select one answer. Each correct answer carries **4 marks**; an incorrect answer carries **−1 mark**.

(iv) Numerical value questions carry **4 marks** for a correct answer and **0 marks** for an incorrect answer. Unanswered questions carry **0 marks**.

(v) All Planning and Aptitude Test questions are compulsory.

(vi) All questions are compulsory.

Section	Questions	To attempt	Marks
Mathematics	25	25	100
Aptitude Test	50	50	200
Planning	25	25	100

Mathematics

1. 4 marks

Let $A = \{1, 2, 3\}$. Define a relation R on A as :

$aRb \Leftrightarrow |a^2 - b^2| \leq 5$.

Then which of the following is not true ?

(1) $R^{-1} = R$, where R^{-1} is the inverse of R.

(2) Range of R is A.

(3) R is reflexive and symmetric.

(4) R is symmetric and transitive.

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2. 4 marks

The locus of the point $z = x + iy$ $(x, y \in \mathbf{R}, i = \sqrt{-1})$ satisfying $\arg\left(\frac{z-3}{z+3}\right) = \frac{\pi}{3}$, is :

(1) a circle with radius $= 2\sqrt{3}$

(2) a circle with centre at $(\sqrt{3}, 0)$

(3) a circle with centre at $(0, 2\sqrt{3})$ and radius 3

(4) an ellipse with length of its minor axis $= 3$

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3. 4 marks

If both the roots of the equation, $x^2-2ax+a^2-1=0\,(a\in \mathbf{R})$ lie in the interval $(-2, 2)$, then the equation, $x^2-(a^2+1)x-(a^2+2)=0$ has

(1) both roots in $(-3, 0)$

(2) one root in $(0, 2)$ and another root in $(-2, 0)$

(3) one root in $[2, 3)$ and another root in $(-2, 0)$

(4) one root in $(-3, -2)$ and another root in $(0, 2]$

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4. 4 marks

If the system of equations

$$2x+y+pz=-1$$
$$3x-2y+z=q$$
$$5x-8y+9z=5$$

has more than one solution, then $q-p$ is equal to :

(1) 2

(2) -2

(3) 4

(4) -4

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5. 4 marks

All the words (with or without meaning) formed using all the five letters of the word GOING are arranged as in dictionary. Then the word OGGIN occurs at the place which is :

(1) $(48)^{th}$

(2) $(49)^{th}$

(3) $(50)^{th}$

(4) $(51)^{th}$

---

6. 4 marks

The sum

$$-\frac{2}{3}+\frac{2}{9^2}+\frac{10}{9^3}+\frac{18}{9^4}+\frac{26}{9^5}+\ldots\ldots\text{upto}$$

infinity, is equal to :

(1) $-\frac{5}{8}$

(2) $\frac{17}{24}$

(3) $-\frac{11}{24}$

(4) $\frac{5}{8}$

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7. 4 marks

Let r and s be respectively the remainders when $(12)^{23}$ and $(23)^{12}$ are divided by 5, then r + s is equal to :

(1) 5

(2) 4

(3) 3

(4) 2

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8. 4 marks

Let f be a differentiable function satisfying $f(x+y)=f(x)+f(y)-xy$ for all $x, y \in \mathbf{R}$. If $\lim\limits_{h\to 0}\frac{f(h)}{h}=3$, then $\sum\limits_{n=1}^{10} f(n)$ is equal to :

(1) $-\frac{55}{2}$

(2) $\frac{275}{2}$

(3) $-\frac{55}{4}$

(4) $\frac{225}{4}$

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9. 4 marks

For non-zero real numbers a, b, if $y(x) = \frac{a + b x^{3/2}}{x^{5/4}}$, $x > 0$ and $y''(5) = 0$, then the ratio a : b is :

(1) $\sqrt{5} : 3$

(2) $3 : \sqrt{5}$

(3) $\sqrt{5} : \sqrt{3}$

(4) $3 : 1$

10. 4 marks

The function $f(x) = \sin 2x + 2\cos x$, $x \in \left(-\frac{3\pi}{4}, \frac{3\pi}{4}\right)$ has :

(1) no critical point.

(2) a point of local maxima and a point of local minima.

(3) a point of local maxima and a point of inflection.

(4) a point of local minima and a point of inflection.

11. 4 marks

The integral $\int \frac{\cos^5\theta}{\sin\theta(4 - 3\sin^2 2\theta)} d\theta$ is equal to :

(where C is a constant of integration)

(1) $\frac{1}{5}\log_e \left|\frac{\cos^5\theta}{\sin^5\theta + \cos^5\theta}\right| + C$

(2) $\frac{1}{24}\log_e \left(\frac{\sin^6\theta}{\sin^6\theta + \cos^6\theta}\right) + C$

(3) $\frac{1}{20}\log_e \left|\frac{\sin^5\theta}{\sin^5\theta + \cos^5\theta}\right| + C$

(4) $\frac{1}{6}\log_e \left(\frac{\cos^6\theta}{\sin^6\theta + \cos^6\theta}\right) + C$

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12. 4 marks

The area (in sq. units) of the region bounded by the parabola $x = 2y^2$ and the line $x + y = 1$ is :

(1) $\frac{11}{12}$

(2) $\frac{13}{24}$

(3) $\frac{9}{8}$

(4) $\frac{5}{4}$

13. 4 marks

Let $y = y(x)$ be the solution of the differential equation $x \log_e x \frac{dy}{dx} + 2y = 2x\ (x > 1)$. If $\lim\limits_{x \to 1+} y(x) = 1$, then $y(e^2)$ is equal to :

(1) $\frac{e^2 - 1}{2}$

(2) $\frac{e^2 + 1}{2}$

(3) $e^2 - 1$

(4) $e^2 + 1$

14. 4 marks

If (x_i, y_i), $i = 1, 2, 3$ are the vertices of an equilateral triangle such that $(x_1 + 3)^2 + (y_1 - 4)^2 = (x_2 + 3)^2 + (y_2 - 4)^2 = (x_3 + 3)^2 + (y_3 - 4)^2$, then the value of $\frac{y_1 + y_2 + y_3}{x_1 + x_2 + x_3}$ is :

(1) $\frac{4}{3}$

(2) $-\frac{4}{3}$

(3) $\frac{3}{4}$

(4) $-\frac{3}{4}$

15. 4 marks

If tangent at $\left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right)$ to the circle $x^2+y^2=1$ is also a tangent to the circle $(x-a)^2+(y-b)^2=1$, then the ordered pair (a, b) can be :

(1) $\left(-2, \sqrt{2}\right)$

(2) $\left(-\sqrt{2}, 2\sqrt{2}\right)$

(3) $\left(2, -2\sqrt{2}\right)$

(4) $\left(-\sqrt{2}, \sqrt{2}\right)$

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16. 4 marks

The foci of a hyperbola coincide with the foci of the ellipse, $\frac{x^2}{16}+\frac{y^2}{9}=1$. If the eccentricity of the hyperbola is 4, then its equation is :

(1) $\frac{x^2}{7}-\frac{4y^2}{105}=\frac{1}{4}$

(2) $\frac{x^2}{7}-\frac{y^2}{105}=\frac{1}{16}$

(3) $\frac{x^2}{20}-\frac{y^2}{75}=\frac{1}{16}$

(4) $\frac{x^2}{5}-\frac{y^2}{75}=\frac{1}{16}$

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17. 4 marks

If the plane P : $2x-y+3z+5=0$ is rotated through 90° about its line of intersection with the plane $5x-4y-2z+1=0$, then the equation of the plane P in the new position is :

(1) $27x-24y-26z+13=0$

(2) $27x-24y-26z-13=0$

(3) $31x+2y-20z-13=0$

(4) $31x-25y+29z+13=0$

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18. 4 marks

The top of two poles, standing 4 m apart on a horizontal plane, are connected by a cable. If the angles of depression from the top of one pole to the bottom of another pole are 30° and 45°, then the minimum length (in m) of the cable is :

(1) $\sqrt{\frac{32\sqrt{3}-16}{3}}$

(2) $\sqrt{\frac{128-32\sqrt{3}}{3}}$

(3) $\sqrt{\frac{122-32\sqrt{3}}{3}}$

(4) $\sqrt{\frac{112-32\sqrt{3}}{3}}$

19. 4 marks

Let A, B and C be three events such that the probability of occurrence of exactly one of A and B is $\frac{1}{2}$, the probability of occurrence of exactly one of B and C is $\frac{3}{4}$ and the probability of occurrence of exactly one of C and A is $\frac{1}{4}$. If the probability of occurrence of all the three events simultaneously is $\frac{1}{16}$, then the probability that at least one of the three events will occur is :

(1) $\frac{7}{16}$

(2) $\frac{13}{16}$

(3) $\frac{7}{8}$

(4) $\frac{15}{16}$

20. 4 marks

Let

p : I have passed JEE (Main),

q : My JEE (Main) rank is 100, and

r : I will appear in JEE (Advanced)

be three statements with truth values T, F and T respectively. Then which one of the following has the truth value, F ?

(1) $(\sim p \vee \sim q) \wedge r$

(2) $(p \wedge \sim q) \vee (\sim r)$

(3) $(\sim p \vee q) \wedge (\sim r)$

(4) $(\sim p \wedge q) \vee r$

21. Numerical value · 4 marks

Let $B = \begin{bmatrix} 22 & -26 \\ -6 & 10 \end{bmatrix}$ be the matrix obtained by applying the elementary row operations $R_2 \to R_2 - R_1$, $R_1 \to 2R_1$ and $R_1 \to R_1 - 2R_2$ (in this order only) on a matrix A. Then the sum of all entries of A is _____.

22. Numerical value · 4 marks

For $b \in \mathbf{N}$, if the limit of the function

$$f(x) = \begin{cases} [5x - 4], & x < 4 \\ \dfrac{[x + b]}{2}, & x > 4 \end{cases}$$

when $x \to 4$, exists and [t] denotes the greatest integer $\leq t$, then b is equal to _____.

23. Numerical value · 4 marks

If $S = \{x \in [0, 4\pi] : \sin 2x - \cos x = 0\}$ and the sum of the elements of S is $k\pi$, then k is equal to _____.

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24. Numerical value · 4 marks

If the mean of the numbers $-7, -5, -2, x, 5$ is -1, then the variance of the numbers $x-3, 4x, x+3$ is _____.

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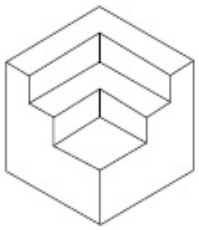
25. Numerical value · 4 marks

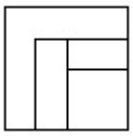
If the equation of a plane P passing through the point $\hat{i} + \hat{j} + \hat{k}$ is $\vec{r} \cdot \left(2\hat{i} - \hat{j} + a\hat{k}\right) = 3$, then the length of the perpendicular from the point $4\hat{i} - \hat{j} + 3\hat{k}$ on the plane P is _____.

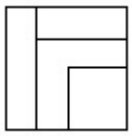
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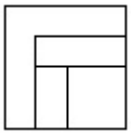
26. 4 marks

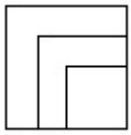
The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.



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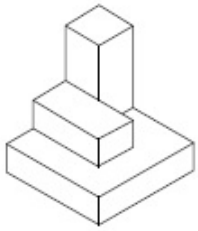
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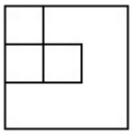
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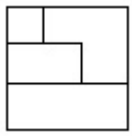
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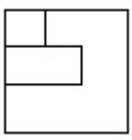
27. 4 marks

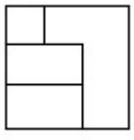
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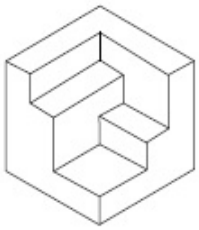
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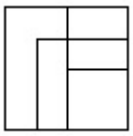
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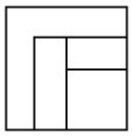
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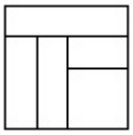
28. 4 marks

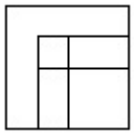
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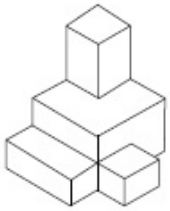
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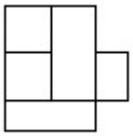
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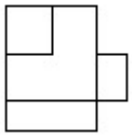
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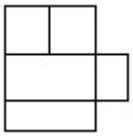
29. 4 marks

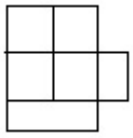
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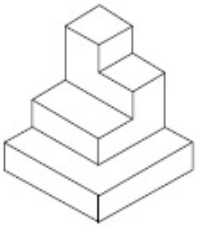
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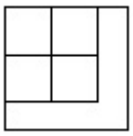
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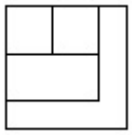
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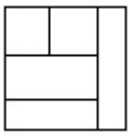
30. 4 marks

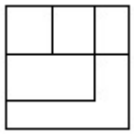
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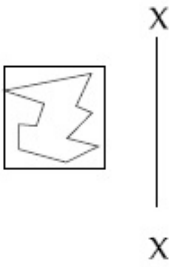
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31. 4 marks

Which one of the answer figures is the correct mirror image of the problem figure with respect to X – X ?



(1) 

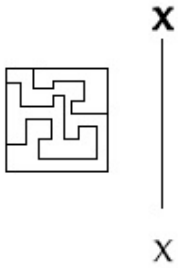
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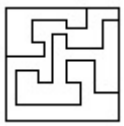
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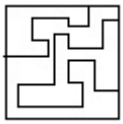
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32. 4 marks

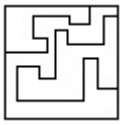
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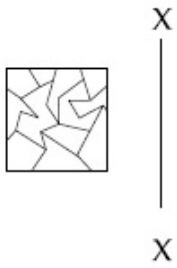
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33. 4 marks

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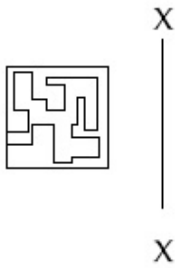
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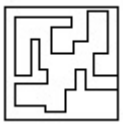
(3) 

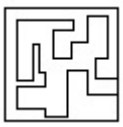
(4) 

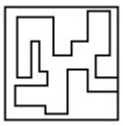
34. 4 marks

Which one of the answer figures is the correct mirror image of the problem figure with respect to X – X ?



(1) 

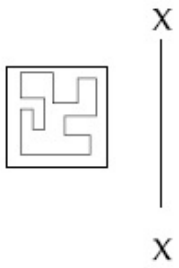
(2) 

(3) 

(4) 

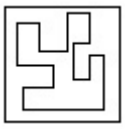
35. 4 marks

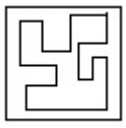
Which one of the answer figures is the correct mirror image of the problem figure with respect to X – X ?



(1) 

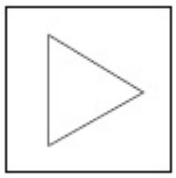
(2) 

(3) 

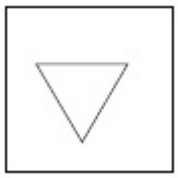
(4) 

36. 4 marks

Find the odd figure out of the problem figures given below.

(1) 

(2) 

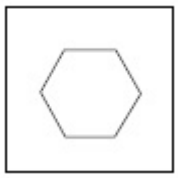
(3) 

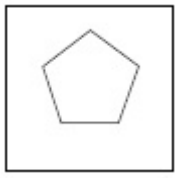
(4) 

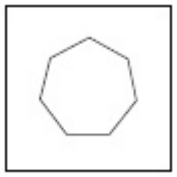
37. 4 marks

Find the odd figure out of the problem figures given below.

(1) 

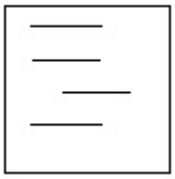
(2) 

(3) 

(4) 

38. 4 marks

Find the odd figure out of the problem figures given below.

(1) 

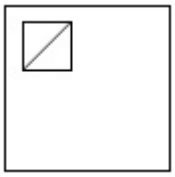
(2) 

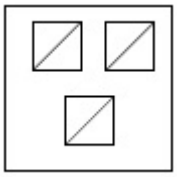
(3) 

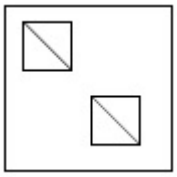
(4) 

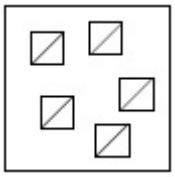
39. 4 marks

Find the odd figure out of the problem figures given below.

(1) 

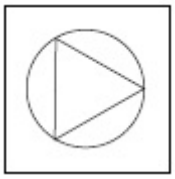
(2) 

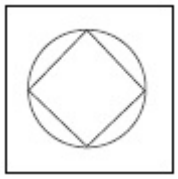
(3) 

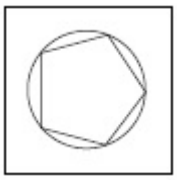
(4) 

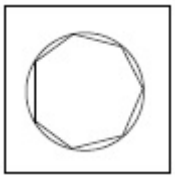
40. 4 marks

Find the odd figure out of the problem figures given below.

(1) 

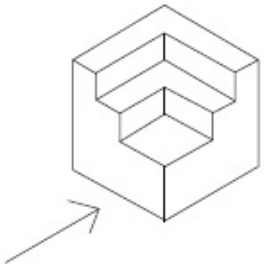
(2) 

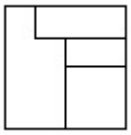
(3) 

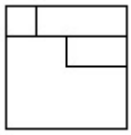
(4) 

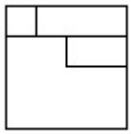
41. 4 marks

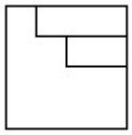
The 3 – D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.



(1) 

(2) 

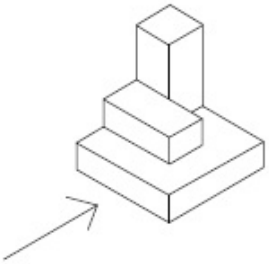
(3) 

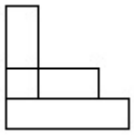
(4) 

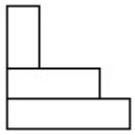
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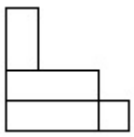
42. 4 marks

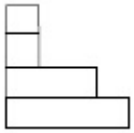
The 3 – D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.



(1) 

(2) 

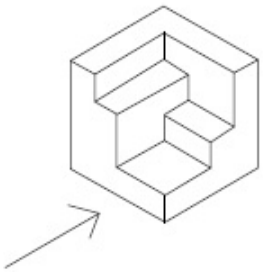
(3) 

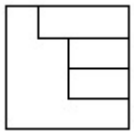
(4) 

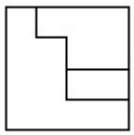
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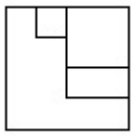
43. 4 marks

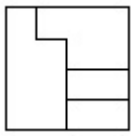
The 3 – D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.



(1) 

(2) 

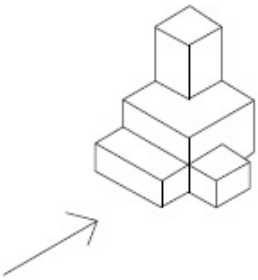
(3) 

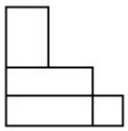
(4) 

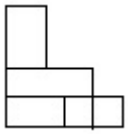
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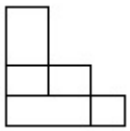
44. 4 marks

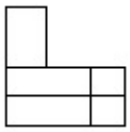
The 3 – D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.



(1) 

(2) 

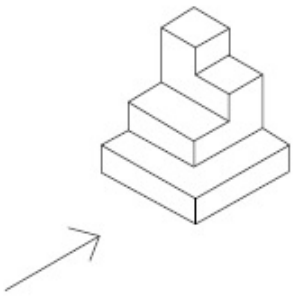
(3) 

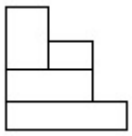
(4) 

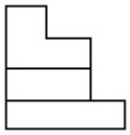
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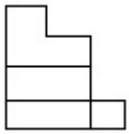
45. 4 marks

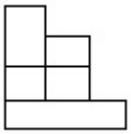
The 3 – D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.



(1) 

(2) 

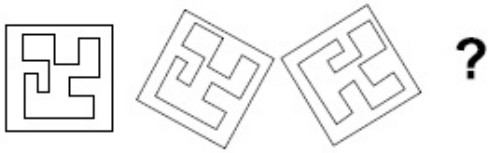
(3) 

(4) 

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46. 4 marks

Which one of the answer figure will complete the sequence of the three problem figures ?



(1) 

(2) 

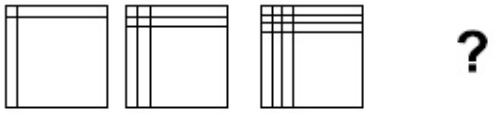
(3) 

(4) 

---

47. 4 marks

Which one of the answer figure will complete the sequence of the three problem figures ?



(1) 

(2) 

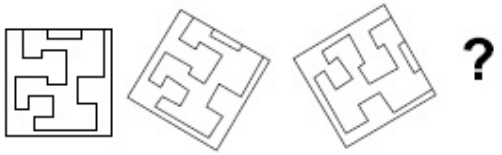
(3) 

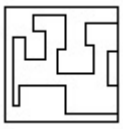
(4) 

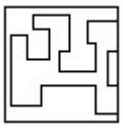
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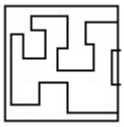
48. 4 marks

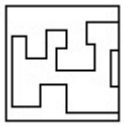
Which one of the answer figure will complete the sequence of the three problem figures ?



(1) 

(2) 

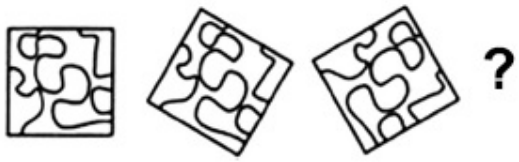
(3) 

(4) 

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49. 4 marks

Which one of the answer figure will complete the sequence of the three problem figures ?



(1) 

(2) 

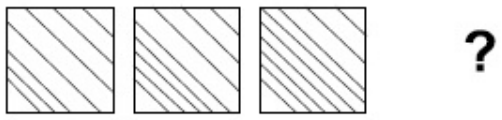
(3) 

(4) 

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50. 4 marks

Which one of the answer figure will complete the sequence of the three problem figures ?



(1) 

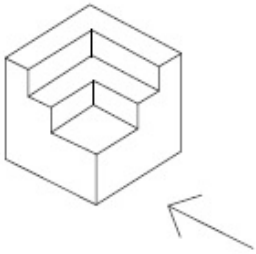
(2) 

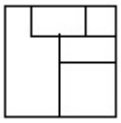
(3) 

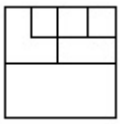
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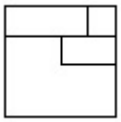
51. 4 marks

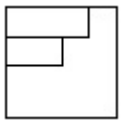
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(1) 

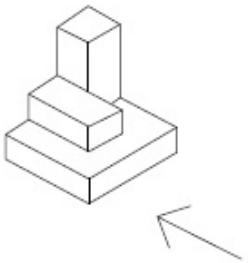
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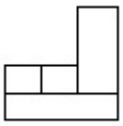
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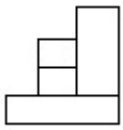
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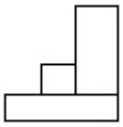
52. 4 marks

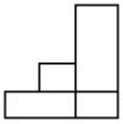
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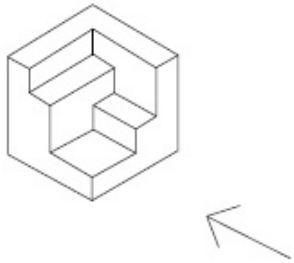
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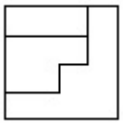
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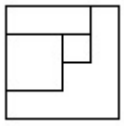
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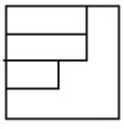
53. 4 marks

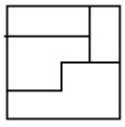
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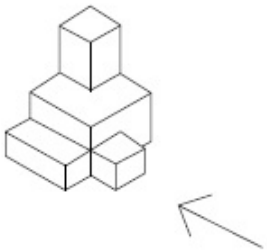
(2) 

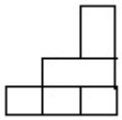
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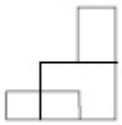
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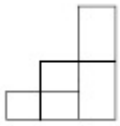
54. 4 marks

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(1) 

(2) 

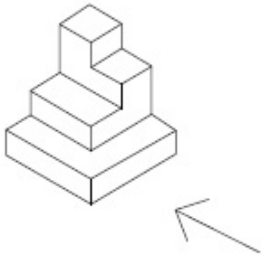
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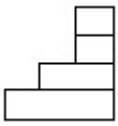
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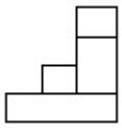
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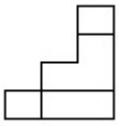
55. 4 marks

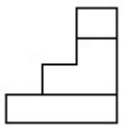
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(1) 

(2) 

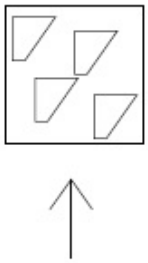
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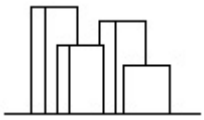
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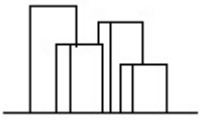
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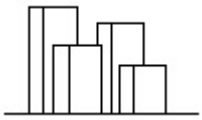
56. 4 marks

The problem figure shows the top view of objects. Looking in the direction of the arrow, identify the correct elevation, from amongst the answer figures.



(1) 

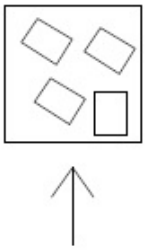
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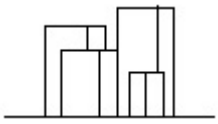
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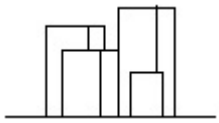
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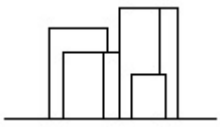
57. 4 marks

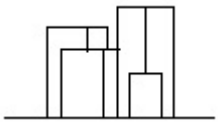
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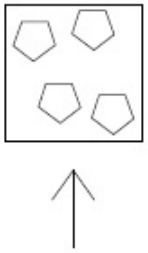
(2) 

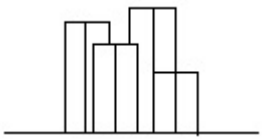
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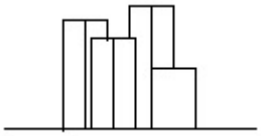
58. 4 marks

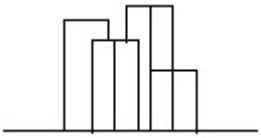
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(1) 

(2) 

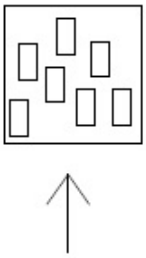
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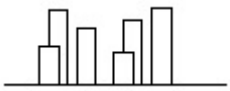
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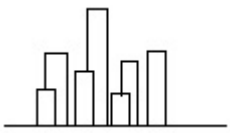
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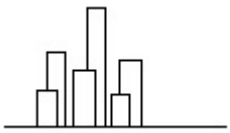
59. 4 marks

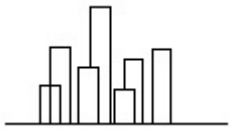
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(1) 

(2) 

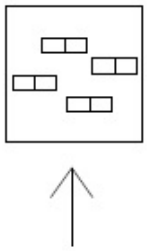
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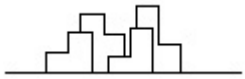
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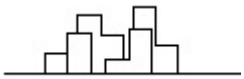
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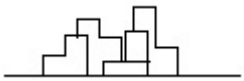
60. 4 marks

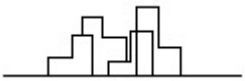
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(1) 

(2) 

(3) 

(4) 

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61. 4 marks

The White House is which one of the following ?

(1) Residence of Prime Minister of Germany

(2) Residence of Prime Minister of France

(3) Residence of Prime Minister of Spain

(4) Residence of President of USA

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62. 4 marks

In the Northern Hemisphere the summer sun rises from which one of the following directions ?

(1) North East

(2) North West

(3) South East

(4) South West

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63. 4 marks

In which of the following States is the Golden Temple located ?

(1) Haryana

(2) Punjab

(3) Assam

(4) Nagaland

---

64. 4 marks

What is the thickness of a one and a half brick thick wall ?

(1) 9″ (2) 12″

(3) 18″ (4) 13.5″

65. 4 marks

Which one amongst the following supports the masonry above doors and windows ?

(1) Foundation (2) Lintel

(3) Slab (4) Wooden frame

66. 4 marks

The Leaning Tower in Italy is located in which one of the following cities ?

(1) Florence (2) Venice

(3) Pisa (4) Rome

67. 4 marks

Which one of the garden of the following is a terraced garden in Srinagar ?

(1) Nishat (2) Vrindaban

(3) Buddha (4) Nehru

68. 4 marks

What amongst the following is the name of the famous museum in Hyderabad ?

(1) Falaknuma (2) Salarjung

(3) Gandhi (4) Nizam

69. 4 marks

Which one of the color is made when blue and yellow are mixed ?

(1) Violet
(2) Orange
(3) Green
(4) White

70. 4 marks

Which one of the following color suggests love and romance ?

(1) Blue
(2) Green
(3) Pink
(4) Brown

71. 4 marks

Which one of the following suggests the texture of the skin of the elderly persons ?

(1) Glossy
(2) Wrinkled
(3) Smooth
(4) Soft

72. 4 marks

Which one of the following is fixed to drain water from a sloping roof ?

(1) Ridge
(2) Eave
(3) J. Bolt
(4) Gutter

73. 4 marks

Which one of the following is ideal flooring for a cinema hall ?

(1) Granite
(2) Brick
(3) Marble
(4) Carpet

collegedunia

74. 4 marks

Who among the following is the architect of the Punjab Haryana High Court Building ?

(1) Maxwell Fry

(2) Le Corbusier

(3) Louis Kahn

(4) Geoffrey Bawa

75. 4 marks

Which one among the following is used for water conservation ?

(1) Water drainage

(2) Water evaporation

(3) Water harvesting

(4) Water flowing

Planning

76. 4 marks

Secondary sector of economic activity is associated with :

(1) Agriculture
(2) Manufacturing
(3) Service
(4) Mining

77. 4 marks

Allocation of powers and functions between Union and State governments is given in which schedule of the Constitution of India ?

(1) First Schedule
(2) Third Schedule
(3) Fifth Schedule
(4) Seventh Schedule

78. 4 marks

Which of the following criteria is **not** the basis of classification of natural resources ?

(1) Exhaustibility
(2) Ownership
(3) Origin
(4) Climate

79. 4 marks

Who amongst the following was involved in design of New Delhi ?

(1) Sir Edwin Lutyens
(2) Le Corbusier
(3) Otto Konigsberger
(4) Patrick Geddes

80. 4 marks

Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched in :

(1) 1970
(2) 1975
(3) 2005
(4) 2010

81. 4 marks

Which of the following does **not** involve community participation ?

(1) Demarcation of dense forests

(2) Urban Basic Services for the poor

(3) Joint Forest Management

(4) Beej Bachao Andolan

82. 4 marks

Out of Mohenjo-daro, Harappa, Lothal and Dholavira, which of the following cities were laid out on grid pattern ?

(1) Mohenjo-daro and Harappa

(2) Mohenjo-daro, Harappa and Dholavira

(3) Harappa and Lothal

(4) Mohenjo-daro, Harappa, Dholavira and Lothal

83. 4 marks

What is the full form of IOT ?

(1) International Organisation for Trade

(2) Internet of Tweets

(3) Interest on Transactions

(4) Internet of Things

84. 4 marks

The Second United Nations Conference on 'Human Settlements Habitat II' was held in :

(1) Vancouver

(2) Kyoto

(3) Istanbul

(4) Quito

85. 4 marks

The first Sub-urban Railway line in India started its operation in :

(1) 1857

(2) 1984

(3) 1901

(4) 1837

86. 4 marks

Which of the following cities is not planned on a grid pattern ?

(1) Washington DC
(2) Amsterdam
(3) Barcelona
(4) New York

87. 4 marks

The largest source of water pollution in India is due to :

(1) Small Scale Industries
(2) Agricultural Run-off
(3) Untreated Sewage
(4) Large Scale Industries

88. 4 marks

What is indicated by a contour line on a topographical map ?

(1) Height
(2) Administrative Boundary
(3) Vegetation
(4) Water Body

89. 4 marks

The ratio that shows a relationship between the distance on a map and the actual distance on ground is known as :

(1) Direction
(2) Key map
(3) Scale
(4) Isotherm

90. 4 marks

Find the correct match :

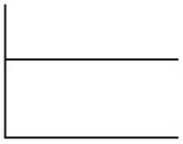
(P)	Dhanbad	(I)	Textile
(Q)	Kandla	(II)	Mining
(R)	Bokaro	(III)	Port
(S)	Surat	(IV)	Steel Industry

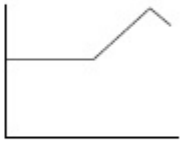
(1) (P)-(II), (Q)-(I), (R)-(III), (S)-(IV)
(2) (P)-(I), (Q)-(III), (R)-(II), (S)-(IV)
(3) (P)-(III), (Q)-(II), (R)-(IV), (S)-(I)
(4) (P)-(II), (Q)-(III), (R)-(IV), (S)-(I)

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91. 4 marks

Select the indicative graph that best fits the **Statement** : "Car prices rose steadily, dropped a little and are now holding steady".

(A) 

(B) 

(C) 

(D) 

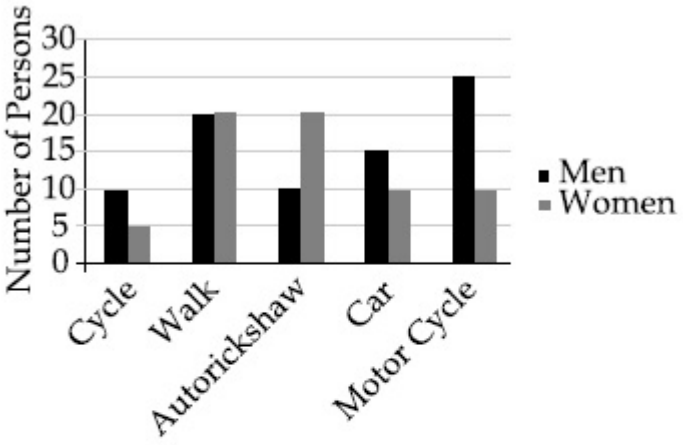
(1) (A)

(2) (B)

(3) (D)

(4) Both (C) and (D)

92. 4 marks



The diagram above shows the number of men and women using different modes of transport to commute to their work place.

Which of these statements is the **correct** answer ?

(1) 50% of all those who cycle to their work places are women

(2) More men compared to women use auto-rickshaw for commuting to work place

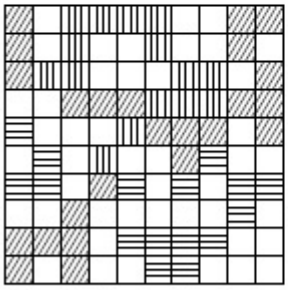
(3) More women compared to men cycle to their work place

(4) The highest share of persons walk to their work place

93. 4 marks

One site is divided into 10×10 units as shown in the figure. It has following classification of land area.

(A) Waste land
(B) Forest land
(C) Agriculture land
(D) Unused land

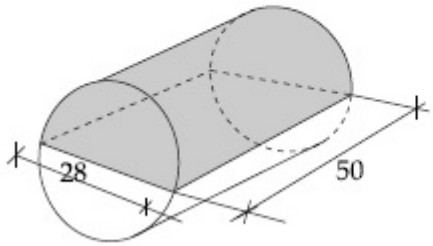


Which of the following classification has the highest amount of land ?

(1) Waste land
(2) Forest land
(3) Agriculture land
(4) Unused land

94. 4 marks

In the given figure the volume of the shaded portion is :



(1) 46,200
(2) 30,800
(3) 15,400
(4) 7,700

95. 4 marks

Following table gives the number of families according to family size. What is the average family size ? (Rounded off to one decimal)

S.No.	Family size (persons)	No. of families
1.	3	300
2.	4	200
3.	5	400
4.	6	400

(1) 4.5

(2) 4.7

(3) 4.9

(4) 5.0

96. 4 marks

Read the given passage and answer the question.

The United Nations (UN) has warned that the global consumption of natural resources could triple to 140 billion tons a year by 2050 unless consumer nations take drastic steps. The UN environment panel called on governments to 'decouple' economic growth from the rapid rate of natural resource consumption. It said the world is already running out of some essential materials including oil, copper and gold, which in turn, will need rising volumes of fuel and water. Decoupling involves transition to a low-carbon, resource efficient green economy that stimulates growth in a way to keep humanity's footprint within planetary.

The term 'decoupling' here would entail :

(1) Birth control measures to reduce resource consumption

(2) Production of cheap materials

(3) Talk less and work more

(4) Promoting growth that stresses on reducing the rate of consumption of natural resources

97. 4 marks

Read the given passage and answer the question.

The United Nations (UN) has warned that the global consumption of natural resources could triple to 140 billion tons a year by 2050 unless consumer nations take drastic steps. The UN environment panel called on governments to 'decouple' economic growth from the rapid rate of natural resource consumption. It said the world is already running out of some essential materials including oil, copper and gold, which in turn, will need rising volumes of fuel and water. Decoupling involves transition to a low-carbon, resource efficient green economy that stimulates growth in a way to keep humanity's footprint within planetary.

Identify the **correct** statement :

(1) 140 billion tons of natural resources will be consumed till the end of 2050

(2) Green economy refers to an economy that is based on forest resources

(3) Green economy refers to an economy that produces at lower carbon footprint and is resource efficient

(4) The UN has asked governments to reduce their economic growth

98. 4 marks

Statement : The citizens of Narbhada city are facing water shortage.

Given are the two courses of action available to the Municipal corporation.

(I) The Municipal Corporation of Narbhada should immediately take action to prevent all water leakages and theft.

(II) The Municipal Corporation of Narbhada should cut the water supply to its residents by half.

Which of the following options is most appropriate ?

(1) only (I)

(2) only (II)

(3) both (I) and (II)

(4) neither (I) nor (II)

99. 4 marks

In a survey taken for household income in an area, mean annual income of the households came to be Rs 10.0 lakh and the median income was Rs 4.0 lakh per annum. Which of the following statement will explain the difference between mean and median income of the households ?

(1) more than 50% of the households have income around 10.0 lakh

(2) more than 50% of the households have income much higher than 10.0 lakh

(3) few households have income much higher than 10.0 lakh

(4) most of the households have income between 4.0 lakh to 10.0 lakh

100. 4 marks

Statement I :

Sustainable development means development that takes place without causing damage to the environment.

Statement II :

Sustainable development means development that meets the needs of the present without compromising the needs of the future generation.

Which of these is **correct** ?

(1) Statement (I) only

(2) Statement (II) only

(3) Both statements (I) and (II)

(4) Neither statement (I) nor (II)