JEE Main 2022 Paper 2B (B.Planning) Jun 23 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) 2022**, conducted by the National Testing Agency on **23 Jun 2022**.

(ii) The paper contains **105 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 **−1 marks** for an incorrect answer. Unanswered questions carry **0 marks**.

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

(vi) In Mathematics Section B, attempt **any five of the ten** numerical value questions.

Section	Questions	To attempt	Marks
Mathematics Section A	20	20	80
Mathematics Section B	10	5	20
Aptitude Test	50	50	200
Planning	25	25	100

Mathematics Section A

1. 4 marks

The equation of the plane passing through the intersection of the planes $\vec{r}\cdot\left(\hat{i}+2\hat{j}-\hat{k}\right)=3$ and $\vec{r}\cdot\left(2\hat{i}-\hat{j}+3\hat{k}\right)=2$, and parallel to the line

$\frac{x-1}{1}=\frac{y-2}{2}=\frac{z-3}{1}$, is

(1) $\vec{r}\cdot\left(-5\hat{i}+10\hat{j}-15\hat{k}\right)=4$

(2) $\vec{r}\cdot\left(-5\hat{i}+10\hat{j}-15\hat{k}\right)=1$

(3) $\vec{r}\cdot\left(-9\hat{i}+6\hat{j}-3\hat{k}\right)=4$

(4) $\vec{r}\cdot\left(-9\hat{i}+6\hat{j}-3\hat{k}\right)=1$

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2. 4 marks

Let $f, g : \mathbb{R} \to \mathbb{R}$ be functions defined by $f(x) = x - 7$ and $g(x) = [7 + \sin x]$, where $[t]$ is the greatest integer less than or equal to t. Then the number of points in $[0, \pi]$, where the function $fog + gof$ is not continuous, is

(1) 1

(2) 2

(3) 3

(4) 5

---

3. 4 marks

Let m and n be non-negative integers such that for $x \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$, $\tan x + \sin x = m$, $\tan x - \sin x = n$. Then the possible ordered pair (m, n) is

(1) (2, 1) but not (3, 4)

(2) (3, 4) but not (2, 1)

(3) both (2, 1) and (3, 4)

(4) neither (2, 1) nor (3, 4)

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4. 4 marks

Let $f(x) = (x + 4)^2 - 4, x \geq -4$. Then $\{x : f(x) = f^{-1}(x)\}$ is equal to

(1) $\{-4, -3, 3, 4\}$

(2) $\{-3, 0, 4\}$

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

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

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5. 4 marks

Let z be a complex number and $\theta = \tan^{-1}\left(\left|\frac{\text{Im}(z)}{\text{Re}(z)}\right|\right)$ be an acute angle. If $\arg(z) = \theta - \pi$, $\left|\text{Re}(z)\right| = \left|\text{Re}(1-2i)^{-3}\right|$ and $\left|\text{Im}(z)\right| = \left|\text{Im}(1-2i)^{-3}\right|$, then $125\,\text{Im}\left(z+\frac{2i}{\bar{z}}\right)$ is equal to

(1) -2752

(2) -1377

(3) -1152

(4) -627

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6. 4 marks

Let $A = [a_{ij}]$, $\det(A) \neq 0$, and $B = [b_{ij}]$ be two 3×3 matrices. If $b_{ij} = 3^{i-j} a_{ij}$ for all $i, j = 1, 2, 3$ then

(1) $3 \det(A) = \det(B)$

(2) $27 \det(A) = \det(B)$

(3) $\det(A) = \det(B)$

(4) $\det(A) = 27 \det(B)$

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7. 4 marks

Let A be a 3×3 symmetric matrix with integer entries. If the sum of all the diagonal elements of A^2 is 2, then the total number of such matrices A is equal to

(1) 12

(2) 6

(3) 18

(4) 24

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8. 4 marks

If $(20C_1)^2 + 2(20C_2)^2 + 3(20C_3)^2 + \ldots + 20(20C_{20})^2 = K$, then $\frac{(20!)^2 K}{40!}$ is equal to

(1) $\frac{1}{10}$

(2) $\frac{1}{5}$

(3) 5

(4) 10

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9. 4 marks

Let $y = y(x)$ be the solution of the differential equation $xdy + ydx = xy^2 dx$, which passes through $(1, 1)$. Then $y(e^{\pi})$ is equal to

(1) $\frac{e^{-\pi}}{1+\pi}$

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

(3) $\frac{e^{\pi}}{1+\pi}$

(4) $\frac{e^{\pi}}{1-\pi}$

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10. 4 marks

Let $f: [-2a, 2a] \to \mathbb{R}$ be a thrice differentiable function and g be defined as $g(x) = f(a + x) + f(a - x)$. If m is the minimum number of roots of $g'(x) = 0$ in the interval $(-a, a)$ and n is the minimum number of roots of $g'''(x) = 0$ in the interval $(-a, a)$, then $m + n$ is equal to

(1) 1

(2) 2

(3) 4

(4) 5

---

11. 4 marks

Let $y = y(x)$ be the solution of the initial value problem $2x\frac{dy}{dx} = 3xe^{\frac{y}{x}} + 2y$,

$y(1) = \log_e 3$. Then $y\left(\frac{1}{e}\right)$ is equal to

(1) $-\frac{1}{e}\log_e\left(\frac{11}{6}\right)$

(2) $\frac{1}{e}\log_e\left(\frac{11}{6}\right)$

(3) $-\frac{2}{e}\log_e\left(\frac{11}{6}\right)$

(4) $\frac{3}{e}\log_e\left(\frac{11}{6}\right)$

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12. 4 marks

Let $f(t)=\int_0^t e^{x^2}\left(\left(1+2x^2\right)\sin x+x\cos x\right)dx$. Then the value of $f(\pi)-f\left(\frac{\pi}{2}\right)$ is equal to

(1) $-\pi\, e^{\pi^2/4}$

(2) $-\frac{\pi}{2}\, e^{\pi^2/4}$

(3) $\frac{\pi}{2}\, e^{\pi^2/4}$

(4) $\pi\, e^{\pi^2/4}$

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13. 4 marks

Let $f:[-2,2]\to\mathbb{R}$ be defined by $f(x)=x\sqrt{4-x^2}$. Then which one of the following is **NOT** true?

(1) f has two critical points in $(-2, 2)$

(2) Minimum value of f is -2.

(3) $x = -2$ is a local minima.

(4) f is increasing in $\left(-\sqrt{2},\sqrt{2}\right)$

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14. 4 marks

If the lines $x + 2y = 1$ and $x - 3y = 1$ are tangents to a circle, then its centre will lie on

(1) $2x-y=1$

(2) $2x-y=2$

(3) $x^2-y^2-14y-2x+14xy+1=0$

(4) $x^2+y^2+14y-2x-14xy+1=0$

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15. 4 marks

The mirror image of the line $\frac{x-3}{-1}=\frac{y+2}{1}=\frac{z-1}{1}$ with respect to the plane $3x-y+4z=2$ is

(1) $\frac{x}{-1}=\frac{y+1}{1}=\frac{z+3}{1}$

(2) $\frac{x}{1}=\frac{y+1}{1}=\frac{z+3}{1}$

(3) $\frac{x+1}{-1}=\frac{y}{-1}=\frac{z+2}{1}$

(4) $\frac{x+1}{-1}=\frac{y}{-1}=\frac{z+2}{-1}$

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16. 4 marks

Let $\hat{a}$ and $\hat{c}$ be collinear unit vectors such that $\left(\vec{b}-4\hat{c}\right)=-9\hat{a}$ for a vector $\vec{b}$.

Then $|\vec{b}|^2$ is equal to :

(1) 27

(2) 25

(3) 21

(4) 18

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17. 4 marks

The probability that two randomly selected distinct 2-digit natural numbers have a common factor either 2 or 3 is:

(1) $\frac{88}{267}$

(2) $\frac{95}{267}$

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

(4) $\frac{608}{1617}$

18. 4 marks

The value of $\int_{-1}^{2} \left|x^3 \sin \pi x\right| dx$ is equal to

(1) $\frac{11}{\pi}-\frac{4}{\pi^2}-\frac{6}{\pi^3}$

(2) $\frac{11}{\pi}-\frac{30}{\pi^3}$

(3) $\frac{11}{\pi}+\frac{4}{\pi^2}-\frac{6}{\pi^3}$

(4) $\frac{11}{\pi}+\frac{30}{\pi^3}$

19. 4 marks

The converse of the logical statement $(p \wedge (\sim q)) \Rightarrow (p \vee q)$ is equivalent to

(1) p

(2) q

(3) $\sim p$

(4) $\sim q$

20. 4 marks

Consider ellipse $E: \frac{x^2}{9}+\frac{y^2}{4}=1$ and hyperbola $H: \frac{x^2}{a^2}-\frac{y^2}{b^2}=1$, with eccentricities e_1 and e_2, respectively. If the hyperbola H passes through the focus of the ellipse E and $e_1 : e_2 = 1:3$, then the length of latus rectum of the hyperbola H is equal to

(1) $2\sqrt{5}$

(2) $4\sqrt{5}$

(3) $8\sqrt{5}$

(4) $10\sqrt{5}$

Mathematics Section B

21. Numerical value · 4 marks

Let $\sqrt{3}x+y=\frac{5\sqrt{3}}{2}$ and $\sqrt{5}x+y=\frac{7\sqrt{5}}{2}$ be two normal lines to the parabola $y^2=2x$ at points P and Q. If the tangent lines at P and Q intersect at the point (a, b), then the value of b^2-a is equal to _____.

22. Numerical value · 4 marks

If the normal to the curve $(y-x^5)^2=x(1+x^2)^2$ at the point $(1, 3)$ passes through the point $(\alpha, 2)$, then $|\alpha|$ is equal to _____.

23. Numerical value · 4 marks

If the system of linear equations
$2x-3y+5z=\beta$
$\alpha x+y+2z=3$
$3x-16y+23z=-13$
has infinitely many solutions, then $\alpha+\beta$ is equal to _____.

24. Numerical value · 4 marks

Let $f:\mathbb{N}\to\mathbb{N}$ be a function defined by
$f(n)=an^2+bn+c$. If $f(1)=3$, $f(2)=6$ and $f(n)=\frac{f(n-1)+f(n-2)+8n^2-3}{6}$
for every $n\geq 3$, then $f(100)$ is equal to _____.

25. Numerical value · 4 marks

If the coefficient of x^8 in the expansion of $(1-x^2)^3(1+2x^3)^7(1+x^4)^5$ is β, then $|\beta|$ is equal to _____.

26. Numerical value · 4 marks

If for real numbers α and β, $\int\frac{1+x\cos x}{x\left(1-x^2e^{2\sin x}\right)}dx=\alpha\log_e\left|\frac{1}{x^2e^{2\sin x}}-\beta\right|+\text{constant}$,
then the value of $10(\alpha+\beta)$ is equal to _____.

27. Numerical value · 4 marks

If the mean and variance of the observations 2, 6, α, 10, 12, β, 15 are 9 and 18 respectively, then $\alpha\beta$ equals _____.

28. Numerical value · 4 marks

The number of real solutions of the equation $e^{4x}+4e^{3x}-e^{2x}-10e^x+6=0$ is equal to _____.

29. Numerical value · 4 marks

Let A_1, A_2, A_3 ..... be an increasing G.P. of positive real numbers. If $A_6 = 49A_2$ and $A_6 + A_3A_5 = 8$, then $A_7\,(A_1 + A_3)$ is equal to _____.

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30. Numerical value · 4 marks

Suppose that $\vec{a}, \vec{b}$ and $\vec{c}$ are non-coplanar vectors in $\mathbb{R}^3$. Let the components of a vector $\vec{n}$ along $\vec{a}, \vec{b}$ and $\vec{c}$ be 2, 5 and 3 respectively. If the components of this vector $\vec{n}$ along $\vec{a}+2\vec{b}-\vec{c}$, $-2\vec{a}+\vec{b}+\vec{c}$ and $\vec{a}-\vec{b}-2\vec{c}$ are x, y and z respectively, then the value of $x + y - 4z$ is equal to _____.

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31. 4 marks

'Amar Jawan Jyoti' which was conceptualised & constructed after Indo-Pakistan war of 1971, is now merged with flame of…

(1) New Parliament Building
(2) National War Memorial
(3) Wagah Border, Punjab
(4) Rastrapati Bhawan

32. 4 marks

Which amongst the following author has wrote the famous book "The Death and Life of Great American Cities".

(1) Charles Comea
(2) Richard Meier
(3) Laurie Baker
(4) Jane Jacob

33. 4 marks

"The Hall of Nations" in Pragati Maidan at New Delhi was designed essentially a three dimensional space with unit of-



(1) A spheroid
(2) A Decahedron
(3) An Octahedron
(4) A Tetrahedron

34. 4 marks

Write the full form of 'CPCB'.

(1) Center Polluted Control Board
(2) Central Pollution Control Board
(3) Central Polluted and Control Board
(4) Center for Pollution and Climate Board

35. 4 marks

The Basilica of Bom Jesus, a UNESCO world heritage site is located in which state of India ?

(1) Daman
(2) Kerala
(3) Goa
(4) Andaman and Nicobar Island

36. 4 marks

The 'Vitruvian Man' is a drawing made by…

(1) Rambrant
(2) Raphael
(3) Leonardo da Vinci
(4) Picasso

37. 4 marks

In which of the following Indian state 'The Garo-Khasi range' is located.

(1) Mizoram
(2) Meghalaya
(3) Nagaland
(4) Manipur

38. 4 marks

Buildings situated in hills will required to consider which of the following phenomeanas, primarily?
(a) Tsunami (b) Hail (c) High Tide (d) Land slide (e) Dust storm (f) Snow

(1) b, c, d
(2) b, e, f
(3) b, d, f
(4) a, b, f

39. 4 marks

'Vienna Peace Congress' was held during which of the following years?

(1) 1813-1814
(2) 1814-1815
(3) 1815-1816
(4) 1812-1813

40. 4 marks

Which of the following is the longest river of the peninsular India ?

(1) Narmada
(2) Godavari
(3) Mahanadi
(4) Tapi

41. 4 marks

At the summer solstice, the sun rises in which direction?

(1) East
(2) West
(3) Far to the North-East
(4) Far North-West

42. 4 marks

Match the Architectural style given in List-I with the famous Building in List-II

List-I	List-II
A. Industrial Building Style	I. The Burlin Brain Library, Burlin
B. Brutalist Style	II. Westminister Abbey
C. Blogitecture Style	III. Eiffel Tower
D. Gothic Architectural Style	IV. Secretariat Building, Chandigar

Choose the correct option.

(1) A-II, B-III, C-IV, D-I
(2) A-III, B-IV, C-II, D-I
(3) A-III, B-IV, C-I, D-II
(4) A-IV, B-I, C-II, D-III

collegedunia

43. 4 marks

Given below are two statements-
Statement-I: Taj Mahal is placed on the northen extremity of the bagh instead of middle to take advantage of the river bank.
Statement II: The white Marble of Taj Mahal is used to achieve contrast with the red sandstone of the surrounding structures.

(1) Both Statement I and Statement II are correct

(2) Both Statement I and Statement II are not correct

(3) Statement I is correct but Statement II is not correct

(4) Statement I is not correct but Statement II is correct

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44. 4 marks

How many minimum points are required to connect to create a 2D plane?

(1) One

(2) Three

(3) Two

(4) Four

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45. 4 marks

An external wall of a room has 4 opening for windows (i.e. A, B, C, D). size of A and B are same i.e. having width of 1.0 m and height 1.5 m. Height of C and D is same as of A and B. Width of C is 2.5 m, what is the width of D, if total opening area is 9 m^2.

(1) 1.0 m

(2) 1.5 m

(3) 2.5 m

(4) 2.0 m

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46. 4 marks

Prestigious international Aga Khan award winning project, 'Slum Networking', a community driven approach, at Indore is designed by ___?

(1) Himanshu Parikh

(2) Uttam Jain

(3) Hasmukh Patel

(4) Neelam Manjunath

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47. 4 marks

'The Garden of the Heart' documentary is based on which of the following renowned architect ?

(1) Santiago Culatrava

(2) Renzo Piano

(3) Kisho Kurokawa

(4) Joseph Allen Stein

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48. 4 marks

List-I	List-II
A. 	I. India Habitat Centre by Stein Joseph
B. 	II. Guggenheim Museum by Frank Lloyd wright
C. 	III. Modern school, New Delhi by Jasbir Sachdev & Rosmerry Sachdev
D. 	IV. Heydear Aliyev Centre by Zaha Hadid

(1) A-I, B-II, C-III, D-IV
(2) A-III, B-I, C-II, D-IV
(3) A-III, B-I, C-IV, D-II
(4) A-I, B-III, C-IV, D-II

49. 4 marks

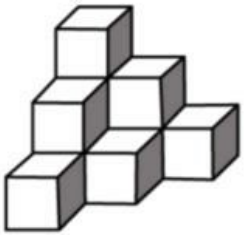
Identify the missing number in given image.

36	100	16
49	100	9
64	?	25

(1) 100
(2) 169
(3) 122
(4) 121

50. 4 marks

Identify the number of cubes in given question image.



(1) 12

(2) 10

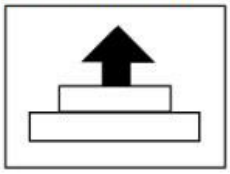
(3) 11

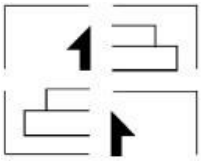
(4) 07

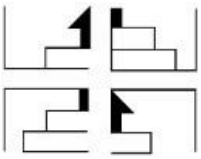
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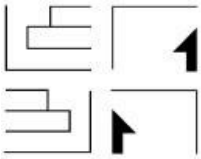
51. 4 marks

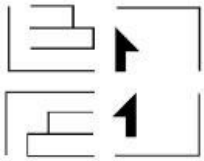
Answer figure shows four parts of an image. After joining these four parts which answer figure will show the exact copy of the question figure ?



(1) 

(2) 

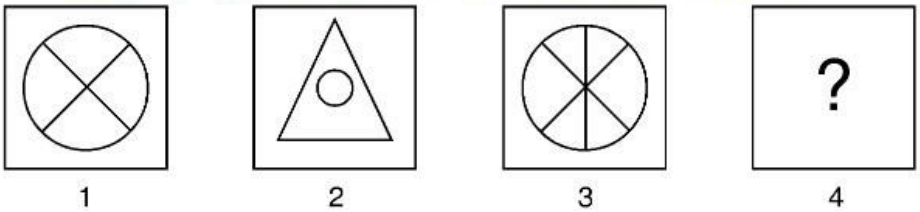
(3) 

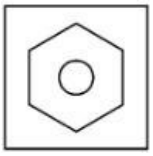
(4) 

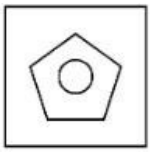
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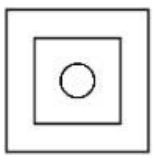
52. 4 marks

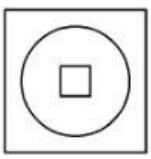
Understand the relationship between 1 and 2. Choose the missing figure from the given options, such that a similar relationship is established between 3 and 4.



(1) 

(2) 

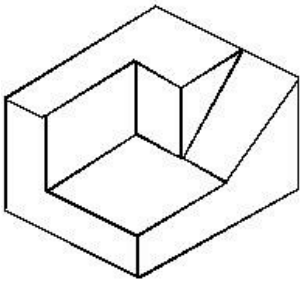
(3) 

(4) 

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53. 4 marks

Find out the number of surfaces of given 3D object in question figure.

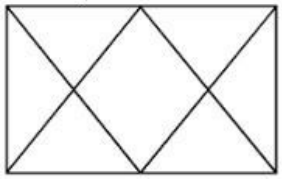


(1) 11
(2) 9
(3) 12
(4) 10

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54. 4 marks

Identify the total number of triangles in question figure given below ?

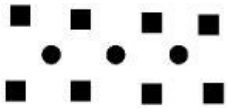
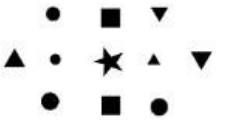
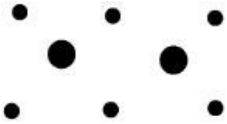
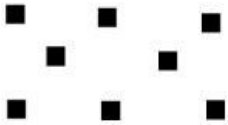


(1) 12
(2) 14
(3) 16
(4) 06

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55. 4 marks

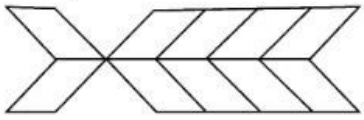
Which of the following compositions best suits for 'Variety'?

(1) 
(2) 
(3) 
(4) 

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56. 4 marks

Identify the total number of rectangles in given image.

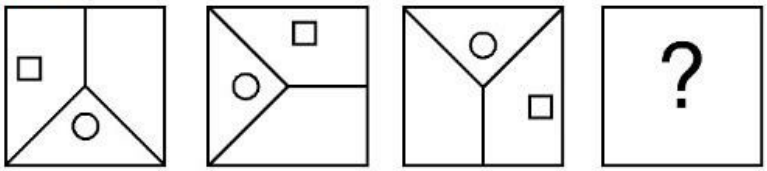


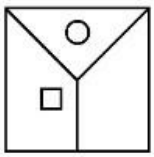
(1) 20
(2) 22
(3) 10
(4) 16

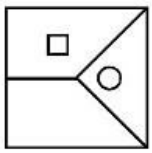
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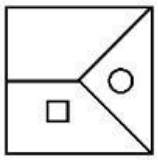
57. 4 marks

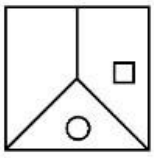
Which of the answer figure will complete the sequence of the three problem figures?



(1) 

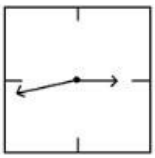
(2) 

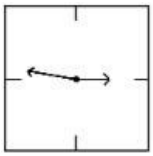
(3) 

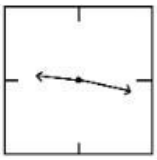
(4) 

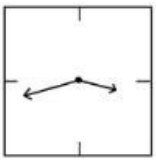
58. 4 marks

Shown below are mirror images of wall clock. Which one of the options shows time 21.16 correctly ?

(1) 

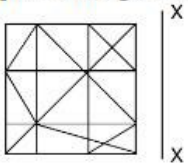
(2) 

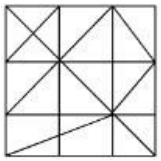
(3) 

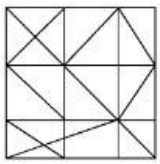
(4) 

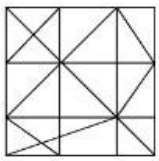
59. 4 marks

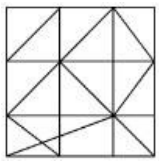
Which one of the answer figure is the most appropriate mirror image of the problem figure with respect to 'X-X'?



(1) 

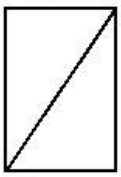
(2) 

(3) 

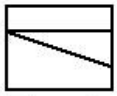
(4) 

60. 4 marks

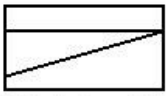
Question figure shows top view/plan, Front elevation and Right side elevation of the same object. Identify the most appropriate 3D view of this object from given answer figures.



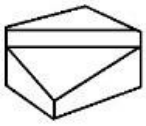
Top

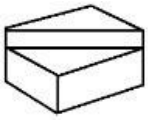


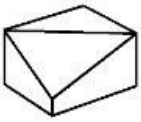
Front elevation

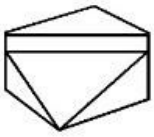


Right side elevation

(1) 

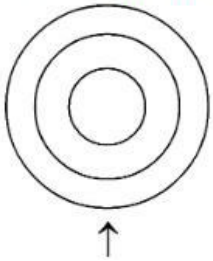
(2) 

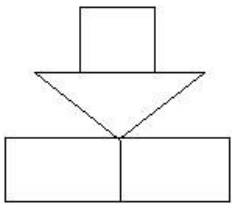
(3) 

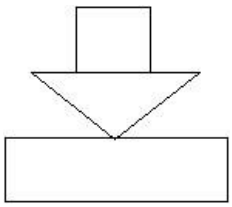
(4) 

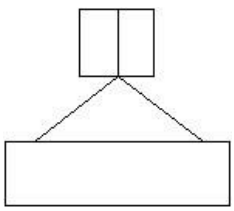
61. 4 marks

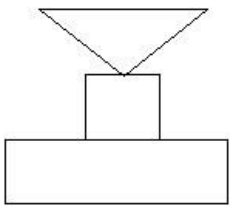
Question figure shows top view/plan of an object. Looking in the direction of arrow, identify the most appropriate elevation from given answer figures.



(1) 

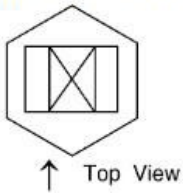
(2) 

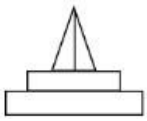
(3) 

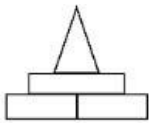
(4) 

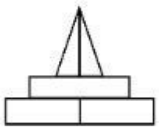
62. 4 marks

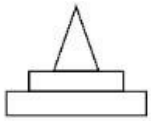
Question figure shows plan of an object. Looking in the direction of arrow identify the correct elevation from given answer figures.



(1) 

(2) 

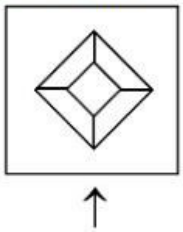
(3) 

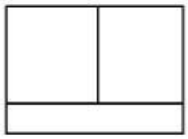
(4) 

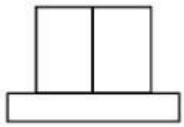
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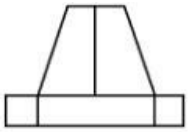
63. 4 marks

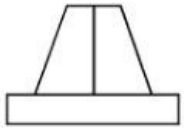
Question figure shows plan of an object. Looking in the direction of arrow, identify the correct elevation from given answer figures.



(1) 

(2) 

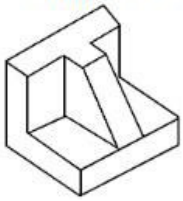
(3) 

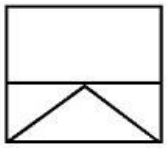
(4) 

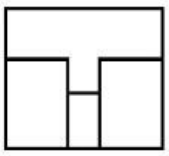
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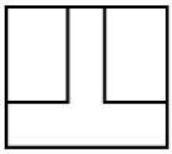
64. 4 marks

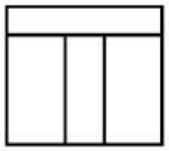
Question figure shows 3D view of an object. Identify the most appropriate top view/plan of given 3D object from answer figures.



(1) 

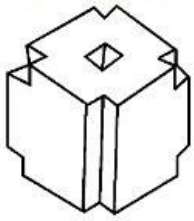
(2) 

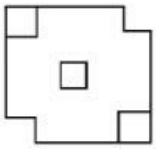
(3) 

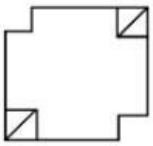
(4) 

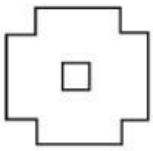
65. 4 marks

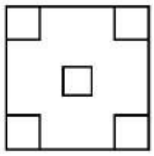
Question figure shows 3D view of an object. Identify the correct top view/plan of given 3D object from answer figures.



(1) 

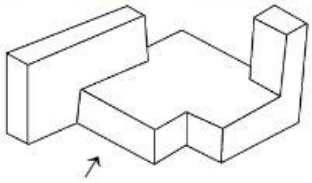
(2) 

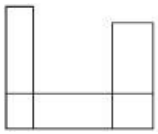
(3) 

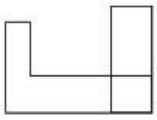
(4) 

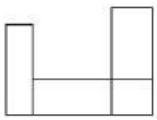
66. 4 marks

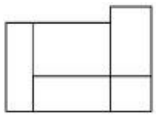
Question figure shows 3D view of an object. Looking in the direction of arrow identify the most appropriate elevation from given answer figures.



(1) 

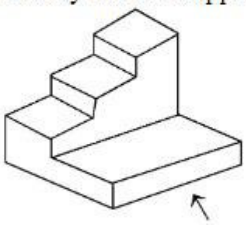
(2) 

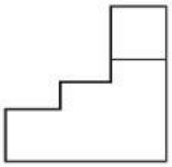
(3) 

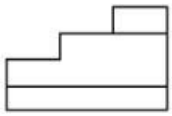
(4) 

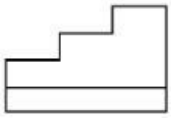
67. 4 marks

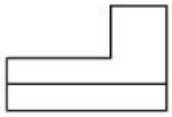
Question figure shows 3D view of an object. Looking in the direction of arrow, identify the most appropriate elevation from given answer figures.



(1) 

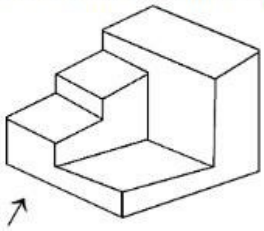
(2) 

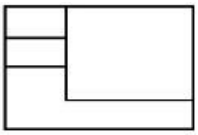
(3) 

(4) 

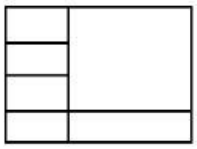
68. 4 marks

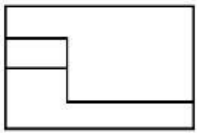
Question figure shows 3D view of an object. Looking in the direction of arrow, identify the most appropriate elevation from given answer figures.



(1) 

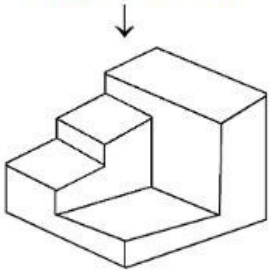
(2) 

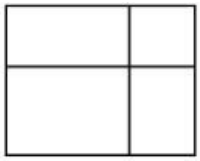
(3) 

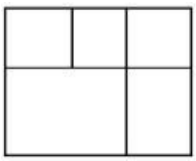
(4) 

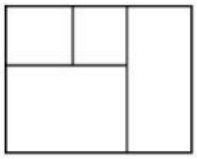
69. 4 marks

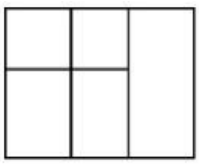
Question figure shows 3D view of an object. Identify the most appropriate top view/plan of the object, from given answer figures.



(1) 

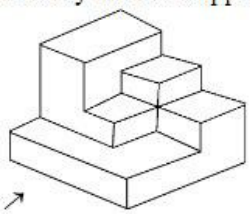
(2) 

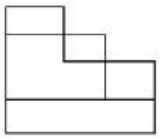
(3) 

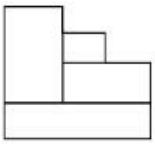
(4) 

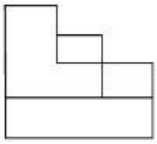
70. 4 marks

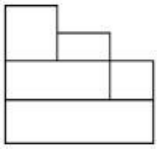
Question figure shows 3D view of an object. Looking in the direction of arrow, identify the most appropriate elevation from given answer figures.



(1) 

(2) 

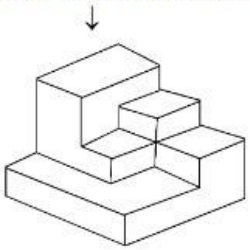
(3) 

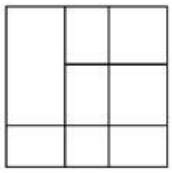
(4) 

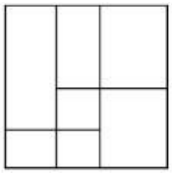
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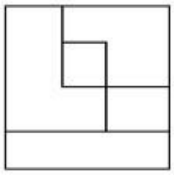
71. 4 marks

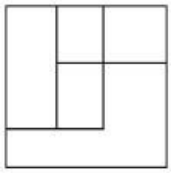
Question figure shows 3D view of an object. Identify the correct top view/plan of an object from given answer figures.



(1) 

(2) 

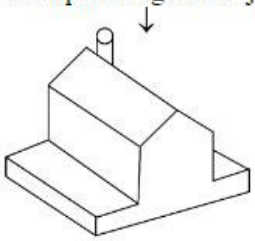
(3) 

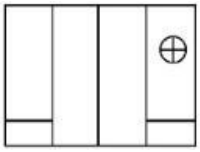
(4) 

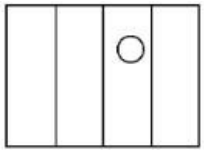
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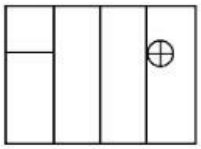
72. 4 marks

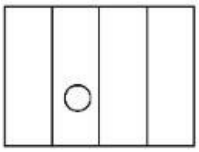
Question figure shows 3D view of an object. Identify the most appropriate top view/plan of given object from answer figures.



(1) 

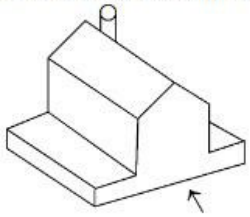
(2) 

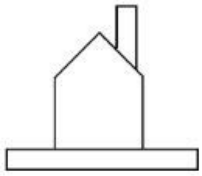
(3) 

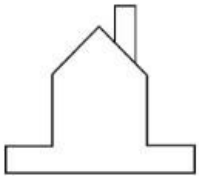
(4) 

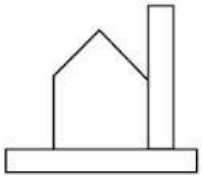
73. 4 marks

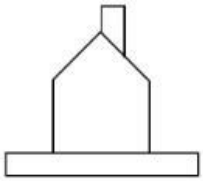
Question figure shows 3D view of an object. Looking in the direction of arrow, identify the most appropriate elevation from given answer figures.



(1) 

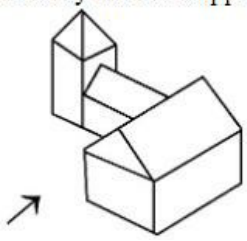
(2) 

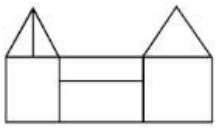
(3) 

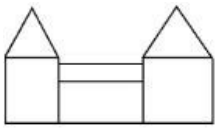
(4) 

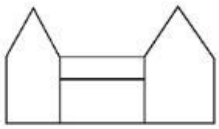
74. 4 marks

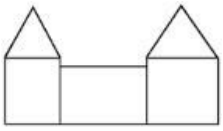
Question figure shows 3D view of an object. Looking in the direction of arrow identify the most appropriate elevation from given answer figures.



(1) 

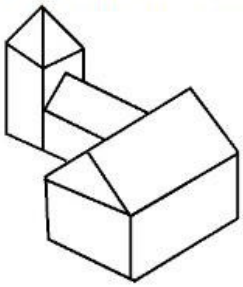
(2) 

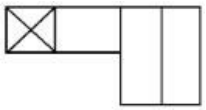
(3) 

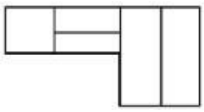
(4) 

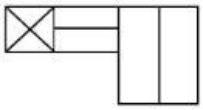
75. 4 marks

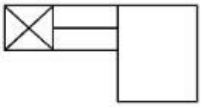
Question figure shows 3D view of an object. Identify the correct top view, plan of given object from answer figures.



(1) 

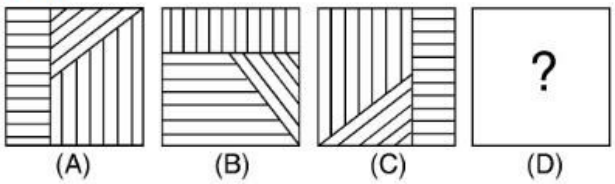
(2) 

(3) 

(4) 

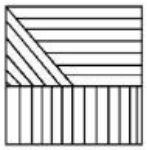
76. 4 marks

In the question figure A and B have certain relation. Choose one of the answer figures from given options, so that similar relation will be established between C and D.



(1) 

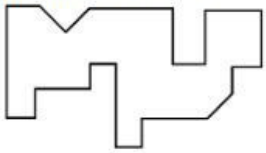
(2) 

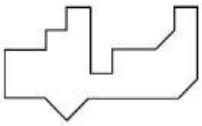
(3) 

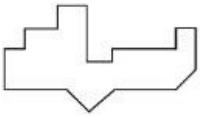
(4) 

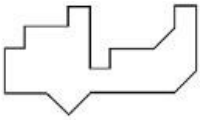
77. 4 marks

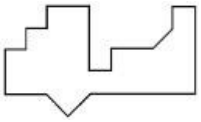
Which of the following answer figures will perfectly interlock with the bottom of the question figure.



(1) 

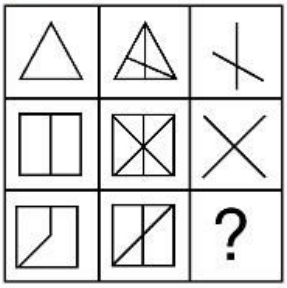
(2) 

(3) 

(4) 

78. 4 marks

Find out which of the answer figures completes the matrix sequence of question figure.



(1) 

(2) 

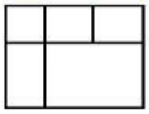
(3) 

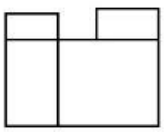
(4) 

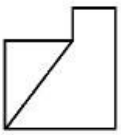
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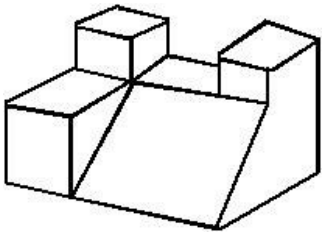
79. 4 marks

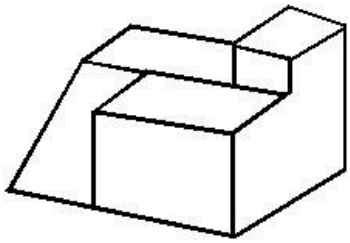
Question figure shows top view/plan, front elevation and right hand side elevation of an object. Identify the most appropriate 3D view of this object.

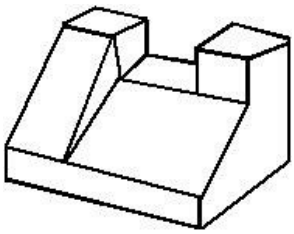

TOP

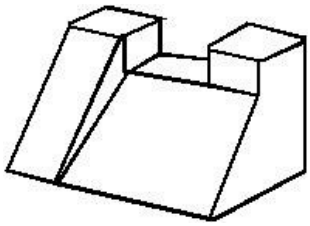

FRONT


RIGHT SIDE

(1) 

(2) 

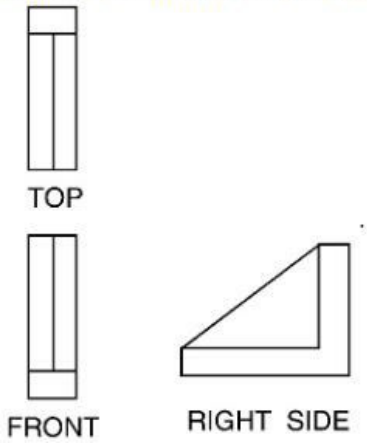
(3) 

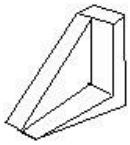
(4) 

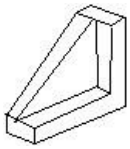
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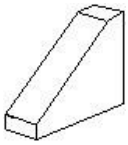
80. 4 marks

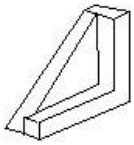
Question figure shows top view/plan, front elevation and right hand side elevation of an object. Identify the most appropriate 3d view of this object.



(1) 

(2) 

(3) 

(4) 

Planning

81. 4 marks

Which city amongst the following cities is not a presidency city of colonial India.

(1) Bombay
(2) Delhi
(3) Calcutta
(4) Madras

82. 4 marks

Match List I with List II

List I	List II
A. Swachh Bharat Mission	I. 2015
B. Jawahar Nehru National Urban Renewal Mission	II. 2014
C. Smart City	III. 2005
D. National Housing and Habital Policy	IV. 1998

(1) A-I, B-III, C-II, D-IV
(2) A-II, B-I, C-IV, D-III
(3) A-IV, B-II, C-III, D-I
(4) A-II, B-III, C-I, D-IV

83. 4 marks

PPP Stands for:

(1) Push Pull Plan
(2) Parent Partnership Program
(3) Public Private Partnership
(4) People Private Partnership

84. 4 marks

Which of the following is the lowest Land point on the earth.

(1) Marina Trench
(2) Dead Sea
(3) Capetown
(4) Bali

85. 4 marks

The Prime minister, Union cabinet minister, chief minister and council of ministers are member of-

(1) National Development Council
(2) Regional Council
(3) Planning Commission
(4) Zonal Council

86. 4 marks

Identify the appropriate sector of economy for 'Education Activity'.

(1) Quaternary
(2) Primary
(3) Secondary
(4) Tertiary

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87. 4 marks

Who amongst the following was appointed as first Town Planning Advisor to Government of India.

(1) H.V. Lancaster
(2) Le - Corbusier
(3) Petric Geddes
(4) Swinton Jacob

88. 4 marks

HUDCO Stands for:

(1) Haryana Urban Development Corporation
(2) Housing in Urban Delhi and Community Development
(3) Housing and Urban Development Corporation LTD
(4) Housing for Urban dwellers and Community Organization

89. 4 marks

As per UNCHS three most significant factors responsible for urban growth are
(A). Economic and Industrial Policies
(B). Changes in Political set up
(C). Changes in Legal/Administrative status
(D). Improvement in quality of life in cities.

(1) A, B, C Only
(2) B, C, D Only
(3) A, C, D Only
(4) A, B, D Only

90. 4 marks

The inequality between duration of day and night become greater or more, marked when we travel from ____ to ____

(1) East to West
(2) Tropic of cancer to tropic of capricorn
(3) Equator to Poles
(4) West to East

91. 4 marks

Oldest continuously inhabited city in India.

(1) Varanasi
(2) Ayodhya
(3) Dwarka
(4) Puri

92. 4 marks

Given below are two statements:
Statement I : Jawahar Lal Nehru Urban Renewal Mission (JNNURM) is a sponsored scheme of central govt.
Statement II : For large cities, the financial contribution by central government and urban, local bodies 50%, 20% and 30% respectively under JNNURM Scheme.

(1) Both statement I and statement II are correct
(2) Both statement I and statement II are not correct
(3) Statement I is correct but statement II is not correct
(4) Statement I is not correct but statement II is correct

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93. 4 marks

Which one of the following lakes is a manmade lake ?

(1) Dal
(2) Wular
(3) Gobind sagar
(4) Sambhar

94. 4 marks

Identify the factor which does not affect economic development.

(1) Natural Resources
(2) Male - Female Ratio
(3) Human Resources
(4) Technology

95. 4 marks

Given below are two statements :
Statement I : The duration of Jawahar Lal Nehru Renewal Mission was 7 years.
Statement II : The number of cities covered under JNNURM is 59.

(1) Both statement I and statement II are correct
(2) Both statement I and statement II are not correct
(3) Statement I is correct but statement II is not correct
(4) Statement I is not correct but statement II is correct

96. 4 marks

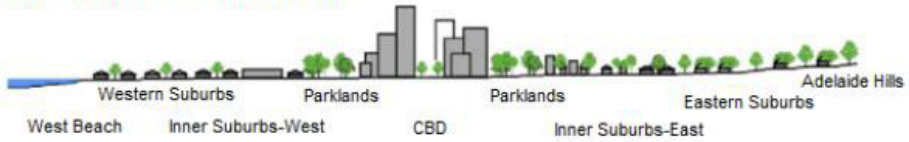
Match List I with List II

List I Land Uses	List II Color cocks
(A). Commercial	I. Yellow
(B). Open Spaces	II. Red
(C). Public and semi public	III. Blue
(D). Residential	IV. Green

(1) A-IV, B-III, C-I, D-II
(2) A-III, B-IV, C-II, D-I
(3) A-I, B-II, C-III, D-IV
(4) A-II, B-I, C-IV, D-III

97. 4 marks

Urban heat is highly dependent to solar radiation and temperature drops significantly after sunset. In the given figure, Identify which area will have maximum effects of urban heat.



Averaged near-surface temperature profile of Adelaide measured between 26 July and 15 August 2013.

(1) Eastern suburbs
(2) CBD
(3) Parklands
(4) Western Suburbs

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98. 4 marks

The housing stock of a town has total number of 90-90 dwelling units. Present population of the town is 45,450. Assuming an average household size of 4.5, the housing shortage in percentage is-

(1) 14
(2) 12
(3) 10
(4) 11

99. 4 marks

Since the conflict began less than a week ago, more than 6,00,000 people have fled Ukraine and millions more are displaced inside the country. UNHCR estimates that more than four million people could flee Ukraine and seek protection and support across the region. The inter-agency Regional Refugee Response Plan is driven by four key objectives: support host countries to ensure every refuge has access to safety and international protection ensuring host countries are able to provide timely and life-saving humanitarian assistance for refugees and third country nationals; facilitate a whole-of-society approach for solutions; ensure effective coordination among partners at the country and regional level.
What is UNHCR stands for in this paragraph?

(1) United Nations Higher Committee for Residents
(2) United Nations Higher Commission for Region
(3) United Nations High Commissioner for Refugees
(4) United Nations Higher Committee for Refugees

100. 4 marks

Since the conflict began less than a week ago, more than 6,00,000 people have fled Ukraine and millions more are displaced inside the country. UNHCR estimates that more than four million people could flee Ukraine and seek protection and support across the region. The inter-agency Regional Refugee Response Plan is driven by four key objectives: support host countries to ensure every refuge has access to safety and international protection ensuring host countries are able to provide timely and life-saving humanitarian assistance for refugees and third country nationals; facilitate a whole-of-society approach for solutions; ensure effective coordination among partners at the country and regional level.
What is UNHCR stands for in this paragraph?

(1) Romania
(2) Germany
(3) Russia
(4) NATO

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101. 4 marks

Match the following:

List I	List II
I. Cadiz, Spain	a. 
II. Sun city USA	b. 
III. Toledo	c. 
IV. Barcelone	d. 

(1) I-d, II-c, III-a, IV-b

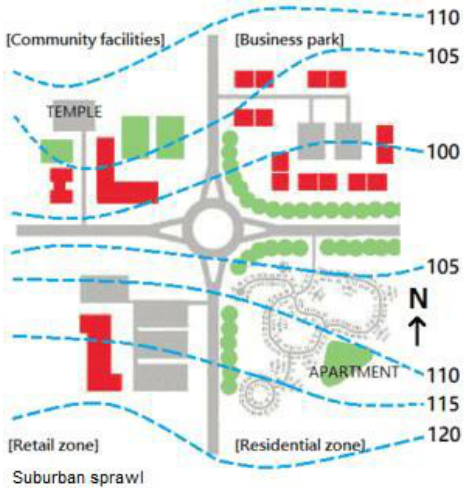
(2) I-c, II-d, III-a, IV-b

(3) I-a, II-b, III-c, IV-d

(4) I-b, II-a, III-c, IV-d

102. 4 marks

In given figure which zone is on North-West direction



(1) Retail

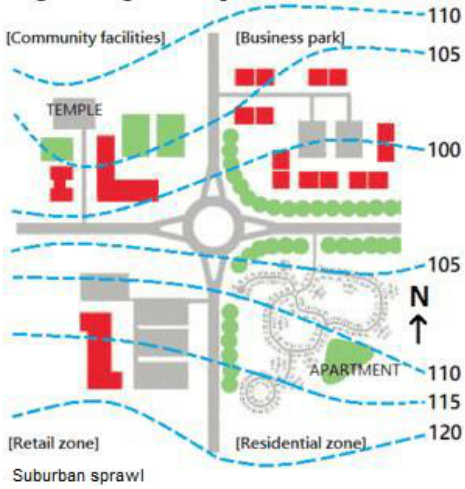
(2) Residential

(3) Community Facilities

(4) Business Park

103. 4 marks

In given figure temple is situated at:



(1) 5 m higher than round about

(2) 10 m higher than round about

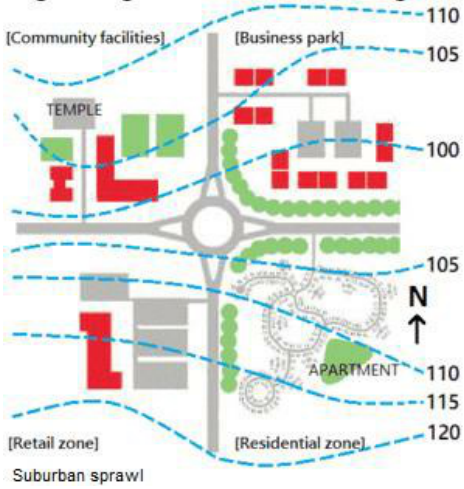
(3) 5m higher than Residential zone

(4) 5 m lower than Business Park

104.

4 marks

In given figure which area is having cul-de-sacs.



(1) Retail Zone

(2) Business Park Zone

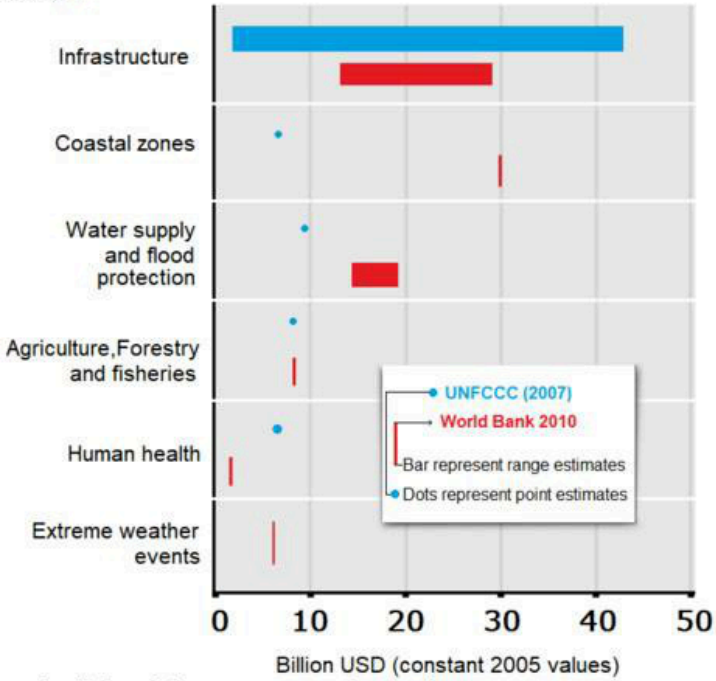
(3) Residential Zone

(4) Community Facilities

105.

4 marks

Statement I : Infrastructure is really expensive due to adoption of climate change in developing countries.
Statement II : The world bank predict that shoring up coastal zones will cost $ 40 billion, while the UNFCC predicts a $ 5 billion price tag (both based on 2005 US dollar)



In the light of the statements, choose the most appropriate answer from the options given below:

(1) Both statement I and statement II are correct

(2) Both statement I and statement II are not correct

(3) Statement I is correct but statement II is not correct

(4) Statement I is not correct but statement II is correct