

Undergraduate Common Entrance Examination for Design

UCEED 2025

Question Paper

Paper Specific Instructions

1. The total duration of the examination is 3 hours. The question paper contains two parts – **Part A** and **Part B**. The duration of **Part A** is **2 hours**. **Part B** will begin after **Part A** ends. The duration of **Part B** is **1 hour**.
2. **Part A** is divided into three sections: 1, 2 and 3. All sections are compulsory. Questions in each section are of different types. There are a total of **57 questions** in **Part A** carrying a total of 200 marks. Questions of **Part A** will appear on the computer **for the first 2 hours**. Answers to **Part A** have to be entered in the **computer** **within the first 2 hours**.
3. **Part B** is also compulsory and contains **2 drawing questions** of 50 marks each. Questions of **Part B** will appear on the computer **after 2 hours**. Answers to **Part B** have to be given in the **answer book** provided by the invigilator.
4. Marking scheme of **Part A** is as follows:

Sec-tion	Type of questions	Number of questions	Marks for correct answer	Marks for wrong answer	Marks for each question not attempted	Total marks for the section
1	Numerical Answer Type (NAT)	14	4	0	0	56
2	Multiple Select Question (MSQ)	15	Partial Marking	-1	0	60
3	Multiple Choice Question (MCQ)	28	3	-0.71	0	84
Total		57				200

5. **Section 1: Numerical Answer Type (NAT):** 14 questions (4 marks each; **no negative** marks). For these questions, **the answer is a number** that needs to be entered using the virtual keyboard on the computer screen. No choices will be shown for these questions. Questions from 1 to 14 belong to this section.
6. **Section 2: Multiple Select Questions (MSQ):** 15 questions. Each MSQ may have **one or more than one correct choice(s)** out of the four given. The following is the marking scheme:

Full Marks: (+4) If only (all) the correct option(s) is(are) chosen and NONE of the incorrect options is chosen.

Partial Marks: (+3) If all the four options are correct but ONLY three options are chosen and NONE of the incorrect options is chosen.

Partial Marks: (+2) If three or more options are correct but ONLY two options are chosen, both of which are correct and NONE of the incorrect options is chosen.

Partial Marks: (+1) If two or more options are correct but ONLY one option is chosen and it is a correct option and NONE of the incorrect options is chosen.

Zero Marks: (0) If NONE of the options is chosen (i.e. the question is unanswered).

Negative Marks: (-1) In all other cases.

Questions from 15 to 29 belong to this section.

7. **Section 3: Multiple Choice Questions (MCQ):** 28 questions (3 marks each for the correct answer; 0.71 negative marks for incorrect answers). Each MCQ has four choices out of which **ONLY ONE is the correct answer**. Questions from 30 to 57 belong to this section.
8. **Part B (100 Marks)** contains **two drawing questions** of 50 marks each. Both questions in **Part B** are mandatory. There is NO NEGATIVE marking in this section. Questions 58 and 59 belong to this section.
9. Calculators, charts, graph-sheets, mathematical tables, mobile phone, watches of any type and other electronic gadgets are **NOT** allowed in the examination hall.
10. Blank sheets of paper will be provided for rough work.

PART A

Section 1: Numerical Answer Type (NAT) questions

Section 1(56 Marks) of Part A contains a total of 14 **Numerical Answer Type (NAT)** questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is **NO NEGATIVE** marking for this section. Each correct answer will be awarded 4 marks. Questions that are not attempted or answered incorrectly will be given zero mark. Questions from 1 to 14 belong to this section.

- Q.01** A painter mixes white and black paints to create different shades in two different buckets. He prepares 10 kg in one bucket with 20% black paint in it. He then prepares 20 kg of another shade in the second bucket with 20% black paint in it. He pours the second bucket into the first one. What is the percentage of black paint in the mixture?

- Q.02** “Betty bought some butter but the butter was too bitter, so she put a little gummy to make the bitter butter yummy.”

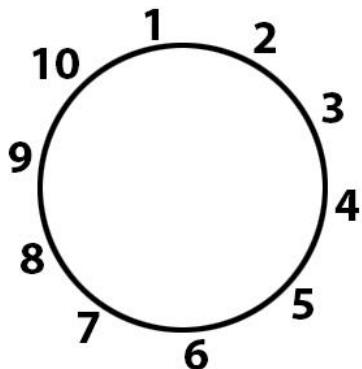
In the above sentence, if you replace every letter ‘t’ with letter ‘b’, what is the total number of instances in which the same letter appears at least twice in a word?

- Q.03** In the 3×3 square on the left, the numbers from 1 to 9 have been filled so that the sum in each row / column / diagonal adds up to 15. If the same exercise is to be carried out for the 4×4 square, using the numbers from 1 to 16, what will be the sum of the numbers in each row / column / diagonal?

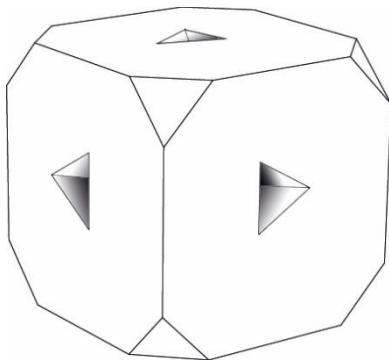
8	1	6
3	5	7
4	9	2

7			14
2			11
9		15	4

Q.04 10 people are standing in a circle. Each person is assigned a number as shown in the figure below. The first person (numbered 1) is removed. Thereafter, in the clockwise direction, every third person is removed and this is repeated till only two people are left. What is the sum of the numbers assigned to the two people who are left at the end?

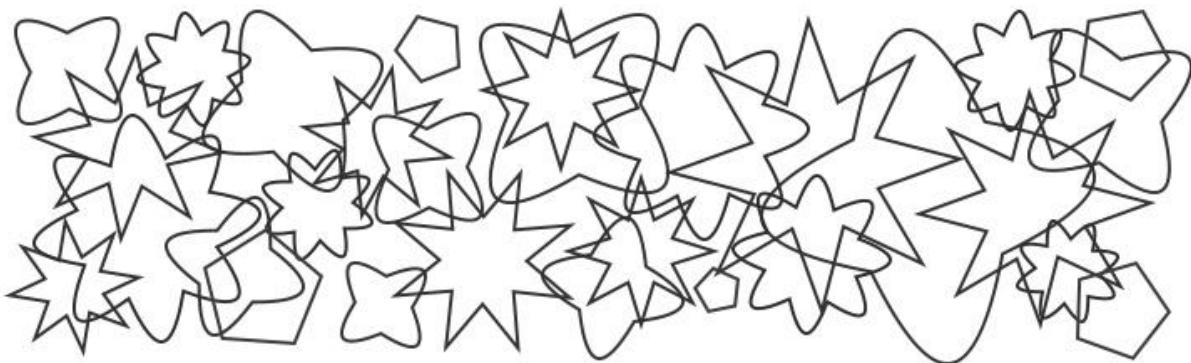


Q.05 A cube $4\text{ cm} \times 4\text{ cm} \times 4\text{ cm}$ has all its corners chamfered as shown in the figure below. On each of its faces it has got a small tetrahedral notch having edges of 1cm each. What is the sum of the number of vertices and the number of edges in this solid?



Q.06 With a straight cut you can slice a circular piece of paper into two pieces. A second cut that crosses the first cut will produce a maximum of four pieces. What is the maximum number of pieces that you can get with a total of four straight cuts?

Q.07 What is the highest number of occurrences of a shape in the figure shown?

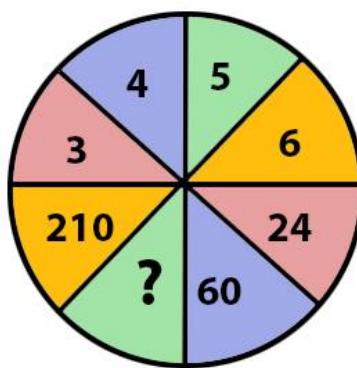


Q.08 Each of the rings in the chain in the given figure has an outer diameter of 5 cm and a cross-sectional diameter of 1 cm. What is the maximum end to end length of the chain in cm?



Q.09 If 1 inch = 25 mm = 6 pica and 1 pica = 12 points = 16 pixels, what is $6 \text{ points} + 2 \text{ inches} + 3 \text{ picas} + 8 \text{ pixels} + 25 \text{ mm}$, represented in pixels?

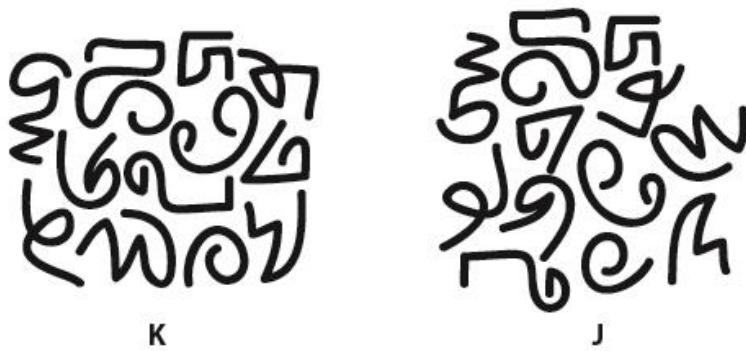
Q.10 What number will replace the question mark?



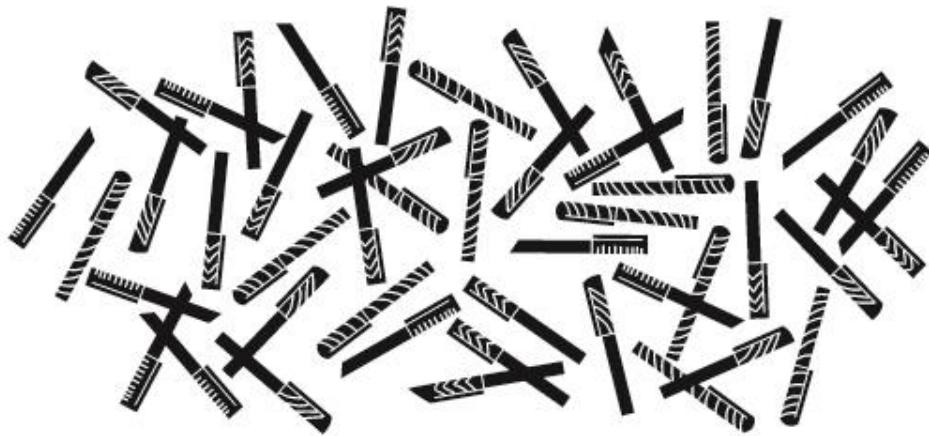
Q.11 What three-digit number can be made from the digits 2, 3, 5, and 7, such that no two digits of the three-digit number are the same and the three-digit number is divisible by each of the digits in it?

Q.12 27 cubes of edge 10 cm are arranged to create a larger cube. If the cubes at the eight corners are replaced with spheres of diameter 10 cm, what is the minimum number of cubes that do not touch any of the spheres?

Q.13 Some of the shapes in the image K are either flipped or rotated in the image J. What is the number of flipped shapes in image J?



Q.14 How many different patterns of pens are present in the given figure?



Section 2: Multiple Select Questions (MSQ)

Section 2 (60 Marks) of Part A contains a total of 15 **Multiple Select Questions (MSQ)**. Each question may have **one or more than one correct choice(s)** out of the four given. The following is the marking scheme:

Full Marks: (+4) If only (all) the correct option(s) is(are) chosen and NONE of the incorrect options is chosen.

Partial Marks: (+3) If all the four options are correct but ONLY three options are chosen and NONE of the incorrect options is chosen.

Partial Marks: (+2) If three or more options are correct but ONLY two options are chosen, both of which are correct and NONE of the incorrect options is chosen.

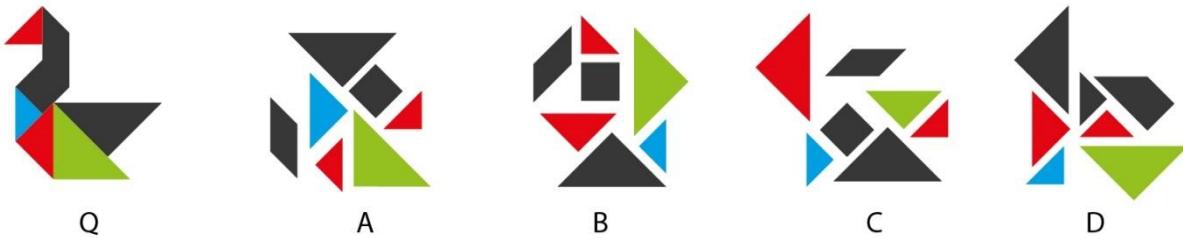
Partial Marks: (+1) If two or more options are correct but ONLY one option is chosen and it is a correct option and NONE of the incorrect options is chosen.

Zero Marks: (0) If NONE of the options is chosen (i.e. the question is unanswered).

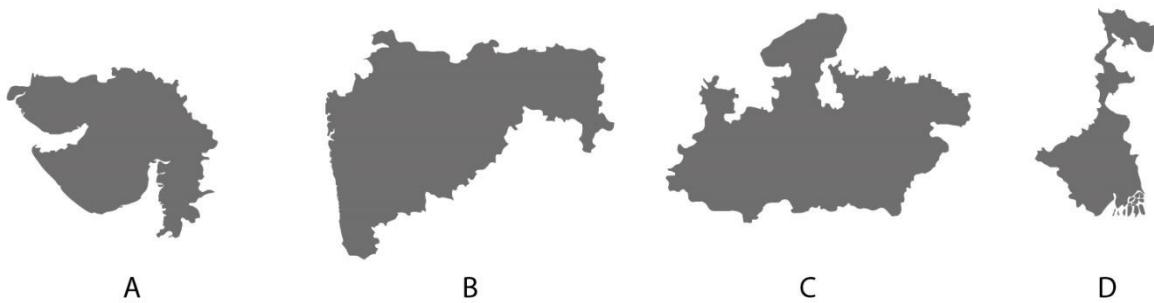
Negative Marks: (-1) In all other cases.

Questions from 15 to 29 belong to this section.

Q.15 Which of the options below can be rearranged to make image Q?

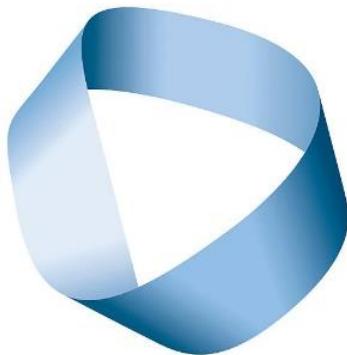


Q.16 The Tropic of Cancer passes through which of the states shown below?



Q.17 Which of the following is / are TRUE for the strip of paper shown in the image?

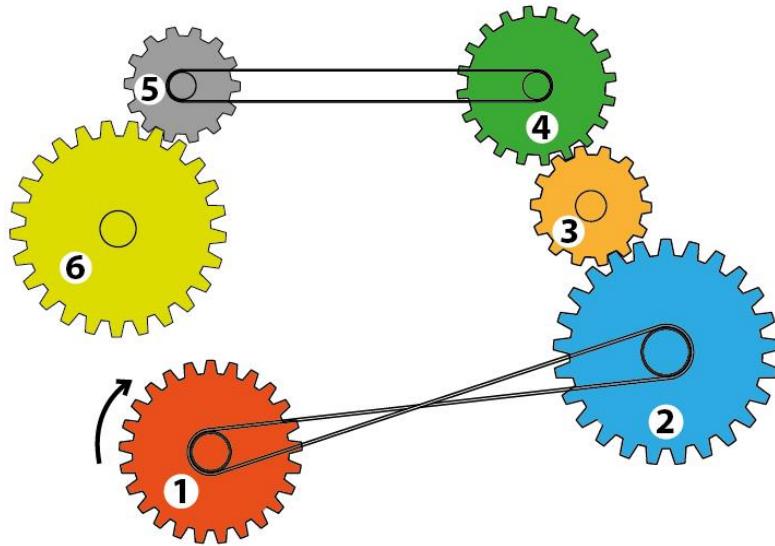
- A. It has two edges.
- B. An ant can walk all over the surface of the strip without having to cross an edge.
- C. A rotating belt that is similar to the strip of paper will have a uniform wear and tear.
- D. This is an optical illusion that can be created as a 2D image but is not possible in 3D.



Q.18 Which of the options is / are CORRECT?

- A. The cap of a water bottle is tightened by rotating it in the clockwise direction (as seen from the top).
- B. To turn on a tap, the tap head is rotated clockwise; to turn it off it is rotated counter-clockwise (as seen from the top).
- C. To loosen a nut of a car wheel, a spanner is turned counter-clockwise clockwise (from the point of view of the person using the spanner).
- D. The earth as seen from the North Pole rotates clockwise about its axis.

Q.19 In the image below, gear 1 rotates in the direction of the arrow. Which of the statements is / are CORRECT?



- A. 1 and 6 rotate in the same direction.
- B. 3 and 6 rotate in the opposite direction.
- C. 1 and 4 rotate in the opposite direction.
- D. 2 and 6 rotate in the same direction.

Q.20 Which of the options does NOT / do NOT match the pieces in the jigsaw puzzle shown in image K?



K



A



B

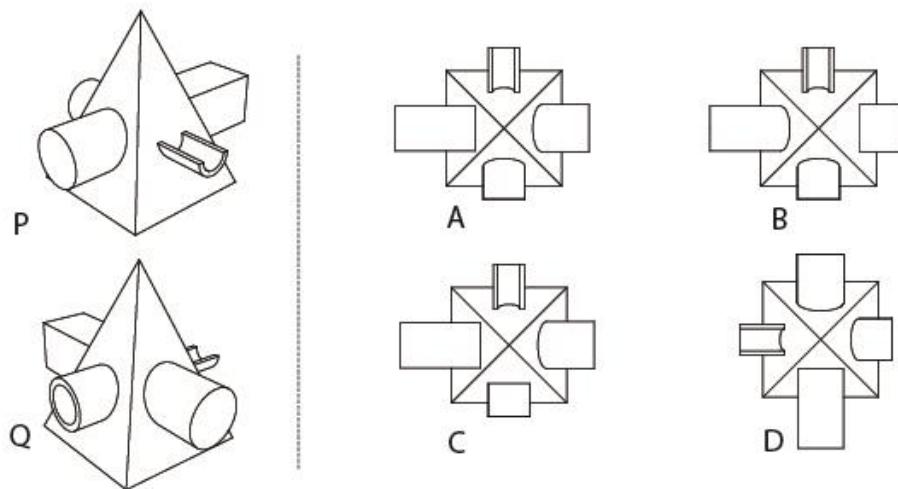


C



D

Q.21 P and Q show two different views of the same solid object. Which of the options represent(s) the top view of the solid object?

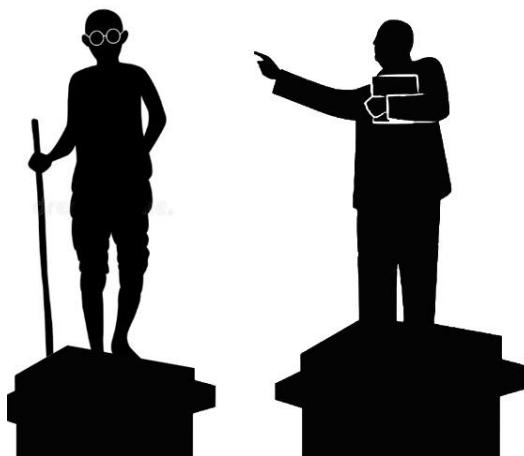


Q.22 Which consultant(s) to the Government of India suggested that the metal *lota* (shown in the given figure) used by many Indians is an appropriate symbol for indigenous design traditions?



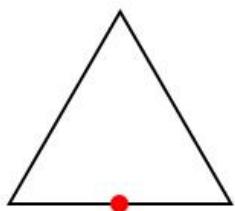
- A. Walter Gropius
- B. Charles Eames
- C. Hannes Meyer
- D. Ray Eames

Q.23 Given below are the silhouettes of two iconic figures in Indian history. Which of the following statements is / are TRUE?



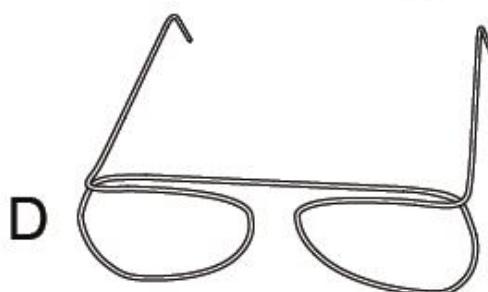
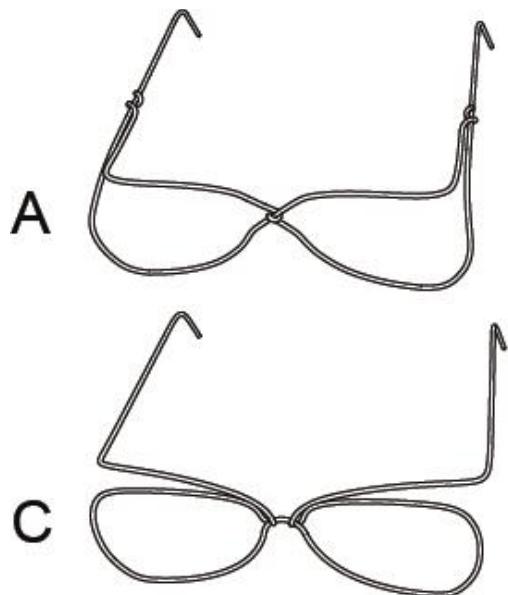
- A. Both had degrees in law
- B. Both spent time in South Africa
- C. The birthdays of both are in the same month
- D. Both dressed in a manner that expressed their ideology

Q.24 Centuries ago, a rich man left behind a treasure represented as a red dot, in the schematic drawing below. If the corners of the triangle represent central locations in the states of Bihar, Telangana and Rajasthan, which is / are the state(s) where one could hunt for this treasure?



- A. West Bengal
- B. Chhattisgarh
- C. Punjab
- D. Madhya Pradesh

Q.25 Which of the options has / have been created by using only a single wire?

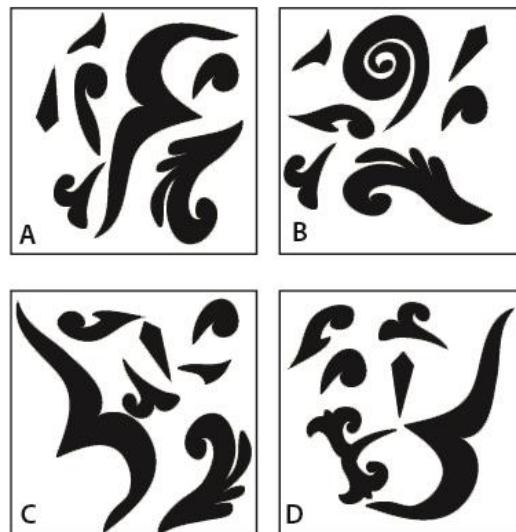
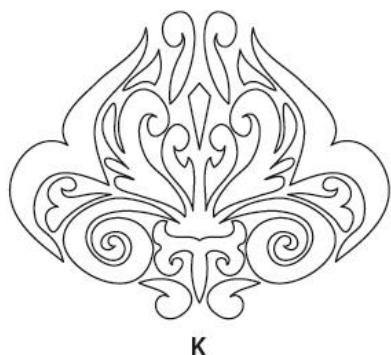


Q.26 Which of the options will replace the question mark?



- A. TATA
- B. AAAAAAA
- C. TAAT
- D. TTT

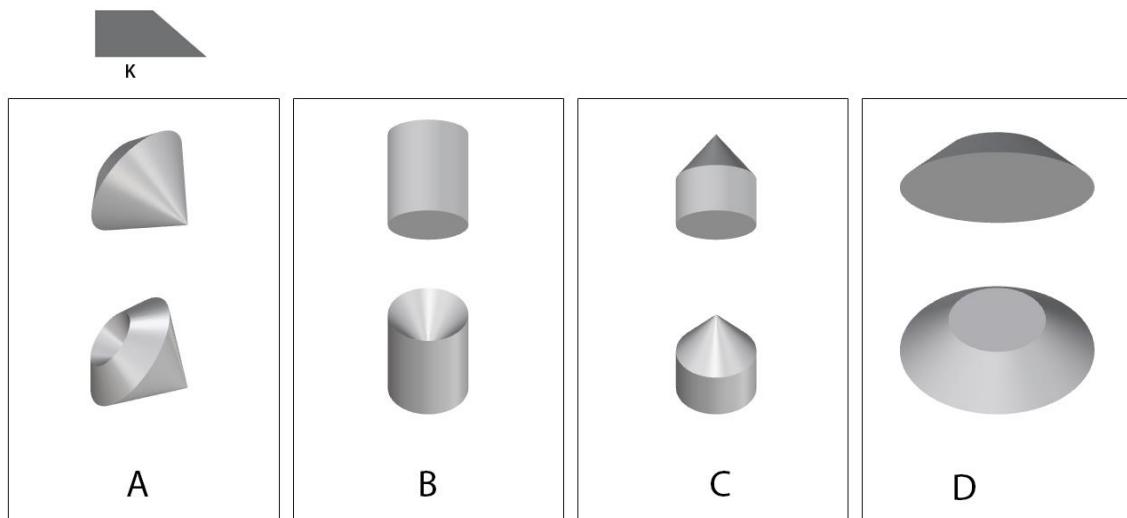
Q.27 Which of the options has / have shapes that DO NOT match the outlines in figure K?



Q.28 An object was sharply focused and a photograph was taken using a camera. The photographer wants to blur the background (change the depth of field) in the next photograph. This can be achieved by changing the

- A. size of opening of the lens (aperture).
- B. distance of the object from the camera and again focusing.
- C. shutter speed to change the duration for which light enters the camera.
- D. focal length of the lens.

Q.29 Which of the options can be generated by revolving the quadrilateral in image K, about its edge?



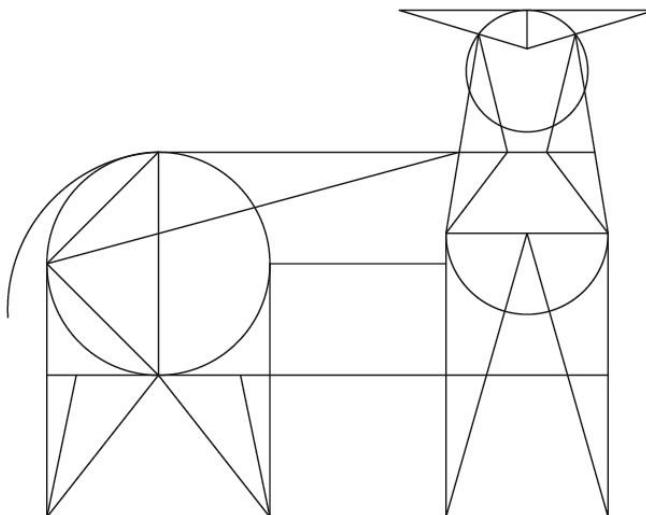
Section 3: Multiple Choice Questions (MCQ)

Section 3 (84 Marks) of Part A contains a total of 28 **Multiple Choice Questions (MCQ)**. Each question has four choices out of which ONLY ONE is the correct answer. There is NEGATIVE marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive -0.71 (minus point seven one) mark. Questions not attempted will be given zero mark. Questions from 30 to 57 belong to this section.

Q.30 What is the length of the edge of the largest cube that can be placed inside a sphere of radius 10 cm?

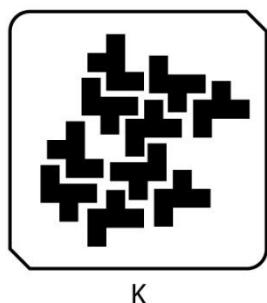
- A. $10 / (\sqrt{2})$ cm
- B. $10 / (\sqrt{3})$ cm
- C. $20 / (\sqrt{2})$ cm
- D. $20 / (\sqrt{3})$ cm

Q.31 What is the total number of triangles in the figure given below?

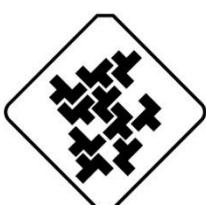


- A. 24
- B. 25
- C. 26
- D. 27

Q.32 Image K is rotated by an angle of 45 degrees anticlockwise. Which option represents the rotated image?



K



A



B



C



D

Q.33 Which of the options is the correct logo of India Post?



A



B



C



D

Q.34 What is the next number in the sequence below?

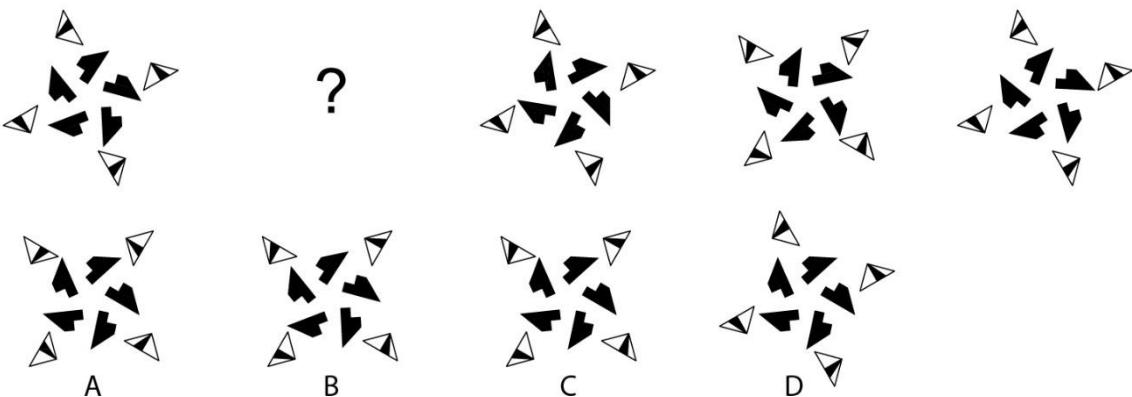
341, 214, 123, 62, 25, ?

- A. 6
- B. 8
- C. 9
- D. 7

Q.35 Which option is the odd one out?

- A. WOW MADAM
- B. CIVIC ROTATOR
- C. SOLO LEVEL
- D. NOON SAGAS

Q.36. Which option will replace the question mark?



Q.37 *Phulkari, Chikankari, Sambalpuri and Paithani* are weaving traditions from different states of India. Which option lists them in the correct sequence?

- A. Uttar Pradesh, Maharashtra, Assam, Punjab
- B. Punjab, Uttar Pradesh, Odisha, Maharashtra
- C. Uttar Pradesh, Odisha, Punjab, Maharashtra
- D. Odisha, Uttar Pradesh, Assam, Punjab

Q.38 What is the number of fonts used in the following sentence?

**From the time of Leonardo Da Vinci, until
the end of the eighteenth century, Science and
Art were much closer than today.**

- A. 3
- B. 6
- C. 5
- D. 9

Q.39 The _____ government organizes the Hornbill Festival each December, promoting cultural heritage and fostering interaction between tribes. The festival has been named after a _____.

- A. Chhattisgarh, bird
- B. Nagaland, bird
- C. Manipur, flower
- D. Shillong, tribal musical instrument

Q.40 The lost wax process is used for _____.

- A. Honey making
- B. Jaggery making
- C. Batik painting
- D. Metal casting

Q.41 You need to hang a large rectangular picture frame on a wall in an empty room. To ensure that it is vertical (and not tilted), which of the following will help you hang the picture correctly (not tilted)? (No additional items are to be used other than the ones specified in each of the options)

- A. A wooden stick, a cutter and a pencil
- B. A pencil, a compass and a cutter
- C. A flexible and transparent pipe and a mug of water
- D. Some card paper, a steel-ruler and a pair of scissors

Q.42 Which of the options is the odd one?

- A. Cobra
- B. Krait
- C. Rat Snake
- D. Viper

Q.43 Which of the following options is the odd one?

- A. Electroplating
- B. Anodizing
- C. Powder Coating
- D. Drilling

Q.44 What is the next number in the sequence below?

7, 11, 18, 30, 50, ____

- A. 83
- B. 84
- C. 85
- D. 86

Q.45 The well-known masterpiece “Mona Lisa” was painted by Leonardo Da Vinci in the 16th Century. Nearly 500 years later another artist made a satirical reference to it; he copied the “Mona Lisa” but painted a moustache on her! Which art movement was this artist associated with?

- A. Dadaism
- B. Cubism
- C. Impressionism
- D. Pop-art

Q.46 Which of the options matches the fruit and the leaf correctly?

(the images are not to scale)



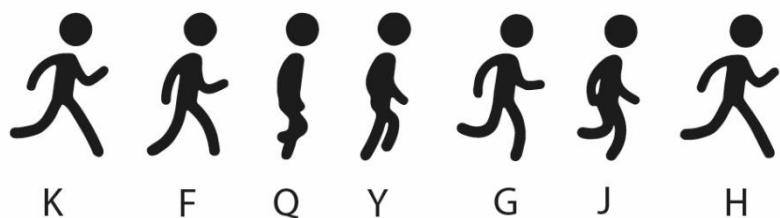
- A. Mango-1, Chikoo-2, Guava-3, Jackfruit-4
- B. Mango-3, Chikoo-4, Guava-2, Jackfruit-1
- C. Mango-4, Chikoo-2, Guava-3, Jackfruit-1
- D. Mango-2, Chikoo-3, Guava-1, Jackfruit-4

Q.47 Which are the rivers numbered from 1 to 4 in the map below?



- A. Ravi, Ganga, Krishna, Cauvery
- B. Sutlej, Yamuna, Godavari, Cauvery
- C. Indus, Ganga, Godavari, Krishna
- D. Chenab, Yamuna, Godavari, Cauvery

Q.48 Which of the sequences in the options will result in the right pattern for a running man?



A: K Q J G Y F H

B: K G J Q Y F H

C: K F Q G Y J H

D: K F Q J Y G H

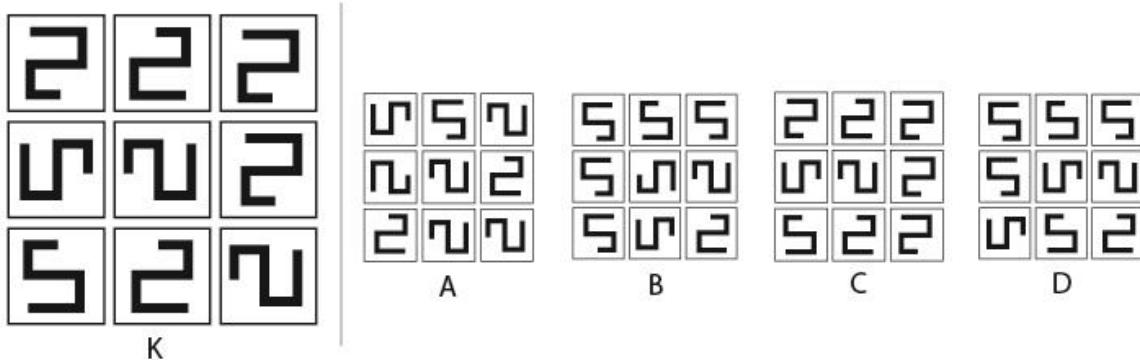
Q.49 Which of the following is the hardest wood?

- A. Teak
- B. Thorny Acacia
- C. Mango
- D. Rosewood

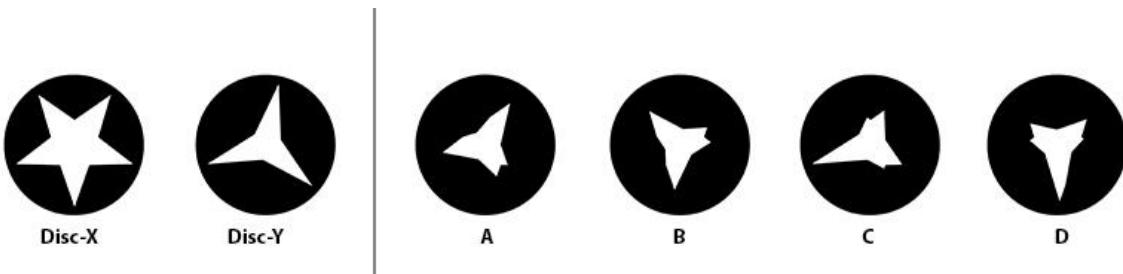
Q.50 Hex codes are used to specify colours on the computer. What colour is the Hex Code CCCCCC?

- A. White (100% white)
- B. Black (100% black)
- C. Dark Grey (80% black, 20% white)
- D. Light Grey (20% black, 80% white)

Q.51 Which is the correct representation in the options, if the image K shown below is flipped about the vertical axis (shown on the right side of K)?



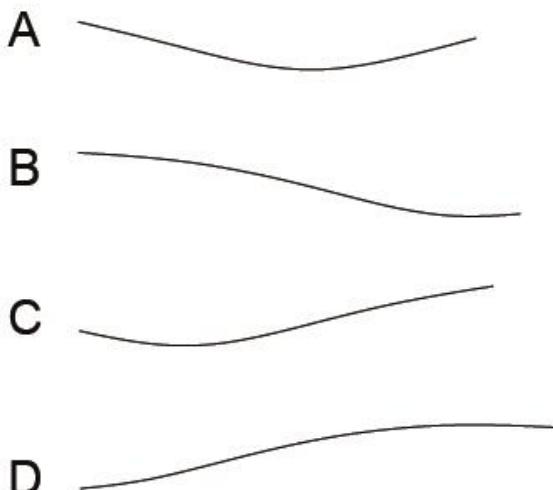
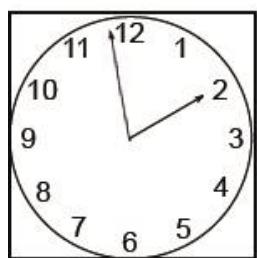
Q.52 Shapes are cut out from two Black Discs, Disc-X and Disc-Y as given below. Identify the correct image, when Disc-Y is kept on top of Disc-X and rotated 60 degrees anti-clockwise.



Q.53 In the cursed land of *Weirdisthan*, strength of animals was disproportionately distributed. Horse has half the strength of a Dog and four times the strength of an Elephant. Monkey has three times the strength of a Rhino. Elephant has half the strength of a Rhino. One Dog was becoming a danger for other animals and they decided to assign a team of animal soldiers to overpower him. Which team of soldiers managed to overpower the dog?

- A. One Rhino and One Monkey
- B. One Rhino, One Horse and One Elephant
- C. One Horse and One Monkey
- D. Two Horses

Q.54 A clock is displaced horizontally at a uniform rate along the direction shown. If the tip of the hour hand is traced from 2 AM to 9 AM, which option shows the correct tracing pattern?



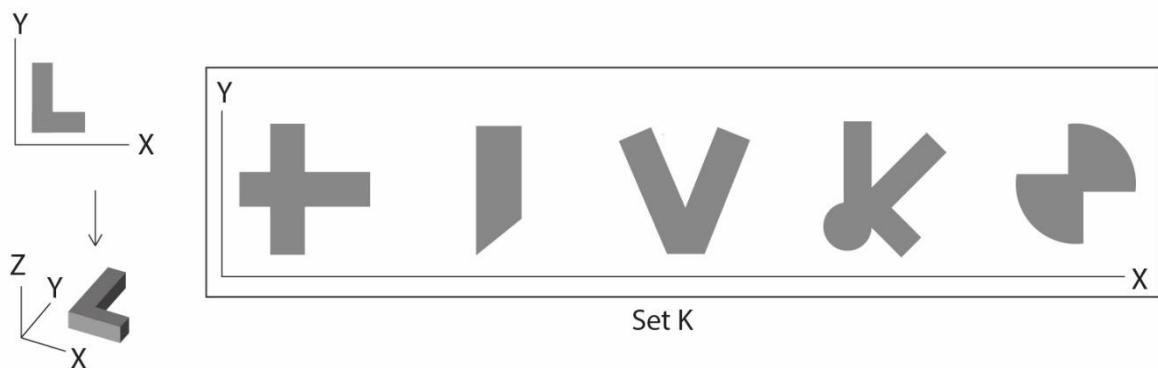
Q.55 Which of the options shows the word “TRANSFORM” as it would appear after it is reflected horizontally along AXIS 1 and then vertically along AXIS 2, as indicated in the figure below?

AXIS 1 TRANSFORM | AXIS 2

A TRANSFORM MROSENAT
B TRANSFORM MROSENAT

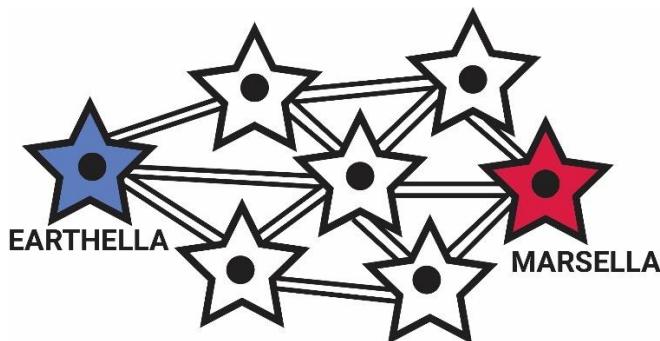
C TRANSFORM MROSENAT
D TRANSFORM MROSENAT

Q.56 The shape L is extruded along Z-axis to form a solid as shown in the figure. How many shapes in the Set K will have more than 8 surfaces when extruded along Z-axis?



- A. 2
- B. 3
- C. 4
- D. 5

Q.57 Residents of planet Earthella are planning to abandon it and fly to planet Marsella because of an acute water crisis. They may choose any of the flight paths connecting Earthella to Marsella through a set of intermediate refuelling stations. How many unique flight paths be charted out if paths cannot retrace any segment that they have already traversed or revisit any station (including Earthella)?



- A. 18
- B. 19
- C. 20
- D. 21

PART B (60 minutes –100 marks)

Q. 1 [50 Marks]

Drawing

The competitive examinations are finally over and you are going on a holiday. You are at the nearest railway station with your family and relatives, waiting for the train that you can see, arriving. The platform is bustling with activity. Other travellers with luggage, vendors and porters (and whatever else you are likely to observe) are also on the platform. Imagine and draw what you see, giving prominence to your family and relatives.

Note:

- Make pencil sketches only
- Do not use colour

Evaluation Criteria:

- Observation
- Composition of figures and objects
- Sense of perspective and proportion
- Quality of lines
- Attention to details

Q. 2 [50 Marks]

Design Aptitude

A visit to a museum or a zoo is always something we look forward to with much excitement. But such visits are very tiring too; after about an hour or so we look for a place to sit – a chair or bench, that is never nearby. What if we could carry our own chair everywhere?

Design a portable seating device that you could carry in your backpack or hand bag. It should be light enough to carry around, small enough to fit into your bag, easy to use, and good to look at.

Show the seating device when:

- 1) it has just been taken out of the bag and
- 2) it is ready to sit on.

Note

- Make pencil sketches only
- Do not use colour
- Explain your design only through visuals and short labels.
- Do not write separate explanations.

Evaluation Criteria

- Suitability of the design for the given context
- Ease of carrying and use
- Uniqueness of design
- Attention to detail
- Explanation of features through visuals only
- Clarity of the sketch and quality of presentation

82/24

Question Booklet Sl. No.

Question Booklet Alpha Code

A

A

Total Number of Questions : 100

Time : 90 Minutes

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A, B, C & D**.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.
6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices **(A), (B), (C) and (D)** having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

A

1. Which part doesn't belong to T square ?
 - i. Working edge
 - ii. Blade
 - iii. Battens
 - iv. Ebony

A) i and ii B) ii and iii C) i and iii D) iii and iv

2. Small bow compass can draw circles less than _____ radius.

A) 30 mm B) 25 mm C) 35 mm D) 40 mm

3. Which of the following is hardest pencil ?

A) HB B) 9H C) 7B D) 3H

4. What is the ratio of length and width of drawing sheet ?
 - i. $1 : 1.414$
 - ii. $\sqrt{2} : 1$
 - iii. $1 : \sqrt{2}$
 - iv. $1 : 1.5$

A) i and ii B) ii and iv C) i and iii D) i and iv

5. What is the inclination of letters recommended by BIS ?

A) 15° towards right B) 75° from horizontal
 C) 15° towards left D) 75° from vertical

6. Which of the following line projecting from the feature and extending beyond the dimension line ?

A) Extension line B) Dimension line C) Leader line D) Out line

7. Which of the following are reducing scale ?
 - i. $10 : 1$
 - ii. $10 : 2$
 - iii. $1 : 2$
 - iv. $1 : 5$

A) i and ii B) ii and iii C) iii and iv D) i and iv

8. Which one of the following is the sum of the interior angles of polygon where 'n' is the number of sides ?

A) $(2 \times n - 4) \times$ right angle B) $(3 \times n - 4) \times$ right angle
 C) $(3 \times n - 5) \times$ right angle D) $(4 \times n - 5) \times$ right angle

9. The conic section at which section plane is inclined to the axis and is parallel to one of the generators of the cone, the section is called
A) Parabola B) Ellipse C) Hyperbola D) Involute
10. In orthographic projection, the projectors are _____ to the plane of projection.
A) Inclined B) Parallel C) Perpendicular D) Vertical
11. In which type of survey, the shape of the earth is taken into account ?
A) Plane survey B) Geodetic survey
C) Geological survey D) None of these
12. The process of fixing intermediate points on a survey line is called
A) Offsetting B) Extending C) Ranging D) Aligning
13. The direction of a line relative to a given meridian is called
A) Bearing B) Angle C) Dip D) Declination
14. The process of putting the plane table into some fixed direction so that line representing a certain direction on the plan is parallel to that direction on the ground
A) Fixing B) Centering C) Levelling D) Orientation
15. Which line is normal to the level line at a point ?
A) Horizontal line B) Vertical line
C) Datum line D) None of these
16. What is the inclination of the needle with the horizontal in prismatic compass ?
A) Dip B) Declination
C) Local attraction D) Variation
17. Which levelling is adopted while it is not possible to set up the level mid way between two points as across river or lake ?
A) Simple levelling B) Differential levelling
C) Profile levelling D) Reciprocal levelling

18. The bottom of a RCC chhajja A was taken as a temporary bench mark (RL 75.150 m). Reading on inverted staff on bench mark A is 2.760 m and reading on peg B on ground is 1.435 m. What is reduced level of B ?
 A) 70.955 m B) 76.475 m C) 79.345 m D) 73.825 m
19. In which method of contouring, spot levels are taken along a series of lines laid over the area ?
 A) Direct method B) Indirect method
 C) Radiation method D) Intersection method
20. A reliable instrument used for setting out a grade contour is
 A) Box sextant B) Pentagraph
 C) Ceylon ghat tracer D) Substane bar
21. What is the process of turning the telescope in vertical plane about its horizontal axis through 180° ?
 A) Transiting B) Swinging C) Centering D) Inverting
22. Which angle is measured clockwise from the previous line to the following line ?
 A) Deflection angle B) Direct angle
 C) Interior angle D) Bearing angle
23. Value of contour interval adopted for town planning schemes, reservoirs etc.
 A) 3 to 5 m B) 2 to 3 m C) 0.5 to 2 m D) 0.2 to 0.5 m
24. Which is the carrier for distance measurement in almost all total stations ?
 A) Radio waves B) Infrared rays C) X-rays D) Gamma rays
25. What least angle capable of measuring with best quality total station ?
 A) 2 sec B) 3 sec C) 5 sec D) 6 sec
26. What is the maximum safe bearing capacity of black cotton soil in dry condition ?
 A) 5 B) 10 C) 15 D) 25

27. What is the name of tool used for setting angle in brick masonry ?
A) Bevel B) Plumb rule
C) Masons square D) 1-meter 4-fold rule
28. Which plaster material used in X-ray rooms to protect the persons working ?
A) Acoustic plaster B) Asbestos cement plaster
C) Barium plaster D) Granite silicon plaster
29. The cracks occur in a centre of a tree and they extend from pith to sapwood in the direction of medullary rays
A) Star shakes B) Radial shakes
C) Cup shakes D) Heart shakes
30. What is the name of the term for hard brownish, unglazed vitrified ceramic material used for architectural ornamentation ?
A) Porcelain B) Terracotta
C) Earthenware D) Stoneware
31. The commonly used retarders are
A) Plaster of Paris B) Gypsum
C) Ammonium chloride D) All of these
32. What is the maximum span for double joist floor ?
A) 3.6 m B) 5 m C) 6 m D) 7.5 m
33. What is the name of term used for the vertical joints separating the bricks in either length or cross direction ?
A) Perpends B) Lap
C) Bed D) Bed joint
34. What is the mass of 6 mm dia. of steel bar ?
A) 0.222 kg B) 0.302 kg
C) 0.395 kg D) 0.888 kg

35. What is the slope usually given on RCC flat roof ?
 A) 1 in 15 B) 1 in 20
 C) 1 in 60 D) 1 in 130
36. What is the name of the test to determine the durability or weathering quality of stones ?
 A) Impact test B) Smith's test
 C) Crushing test D) Crystallization test
37. Which class of brick is used for unimportant situation and for internal walls ?
 A) 1st Class brick B) 2nd Class brick
 C) 3rd Class brick D) 4th Class brick
38. What is the name suitable for cold weathering concrete ?
 A) Hydrophobic cement B) Modified portland cement
 C) Extra rapid hardening cement D) High alumina cement
39. Name the sand which passes through a sieve with clear opening of 3.17 mm and used for masonry work.
 A) Fine sand B) Coarse sand
 C) Gravelly sand D) Mountain sand
40. What is the weight of steel in kg/m² ?
 A) 7200 B) 7850 C) 11360 D) 8590
41. What will happen when vertical and inclined surface are too thickness painted ?
 A) Sagging B) Blistering
 C) Flaking D) Bloom
42. What is the name of the treatment that to protect the building against termites is a maintenance treatment open earth around building and treat with chemicals ?
 A) Soil treatment B) Structural barriers
 C) Post-construction treatment D) Pre-construction treatment

43. Slate is an example of
- A) Sedimentary rock
 - B) Metamorphic rock
 - C) Igneous rock
 - D) Argillaceous rock
44. What is the name of class lime which can be used for structural work such as arches, domes etc. ?
- A) Class a
 - B) Class B
 - C) Class c
 - D) Class d
45. What is the yield strength of HYSD bars ?
- A) 250 N/mm²
 - B) 140 N/mm²
 - C) 415 N/mm²
 - D) 230 N/mm²
46. The decrease or loss in the value of property due to structural deterioration use, wear and tear is called
- A) Annuity
 - B) Capital cost
 - C) Rateable value
 - D) Depreciation
47. What is the measurement unit for the cornice works in estimation ?
- A) Meter
 - B) Square meter
 - C) Cubic meter
 - D) Cubic feet
48. The estimate prepared while the original sanctioned estimate is exceeding by more than 5 percentage is called
- A) Supplementary estimate
 - B) Revised estimate
 - C) Extension estimate
 - D) Plinth area estimate
49. Printed list of rates of various items of work maintained by the engineering department
- A) Schedule of rates
 - B) Govt. rate book
 - C) Market rate
 - D) Analysis of rate
50. Annual periodic payment for repayment of capital amount invested by a party
- A) Capital cost
 - B) Annuity
 - C) Depreciation
 - D) Outgoings

51. Plastering area taken for a pillar
A) Length × breadth × height B) Perimeter
C) Section area × height D) Perimeter × height
52. Forest Conservation Act was passed in the year
A) 1992 B) 1980 C) 1972 D) 2000
53. IS Code used for fire safety is
A) IS 1641 – 1960 B) IS 291 – 1900
C) IS 456 D) IS 1984
54. Plan approved and sanctioned by the competent authority
A) Key plan B) Site plan
C) Approved plan D) Sanctioned plan
55. Permissible F.A.R. for the commercial building
A) 2 (Two) B) 2.5 (Two.Five)
C) 2.8 (Two.Eight) D) 3.2 (Three.Two)
56. The estimated cost charged to meet the expense of establishment designing, planning, supervision etc. which is of 10 – 15% of the estimated cost
A) Tools and plant cost
B) Work charged establishment cost
C) Complete estimate cost
D) Centage charge
57. Statement of various items of work giving the description of quantities and unit rates where the amount columns are left blank is called
A) Bill of quantities B) Specification
C) Rough cost estimate D) Plinth area estimate
58. Diameter of mild steel bars is expressed in
A) mm B) cm C) cm^2 D) $\phi \times \text{mm}$

59. Unit of payment for boring holes in iron
- A) Per dia
 - B) Per number
 - C) Per cm
 - D) Per quintal
60. Which one is not included in job overhead ?
- A) Establishment
 - B) Losses on advances
 - C) Amenities of labour
 - D) Workmans compensation
61. Importance of orientation of building
- A) Outdoor projection
 - B) Indoor modification
 - C) Aesthetic
 - D) Reduction of energy bills
62. Maximum covered area for an industrial building
- A) 40% of site area
 - B) 50% of site area
 - C) 60% of site area
 - D) 70% of site area
63. Carpet Area
- A) Total plot area – circulation area
 - B) Total circulation area – floor area
 - C) Total floor area – circulation area
 - D) Total area of floor – wall area
64. Nominal size bricks needed for 1m³ of brick work
- A) 500
 - B) 1000
 - C) 650
 - D) 450
65. Process of determining the value of the property or the fair price of property
- A) Valuation
 - B) Fixation
 - C) Estimation
 - D) Taxation
66. In which irrigation method, water is supplied to lower level by the action of gravity ?
- A) Flow
 - B) Lift
 - C) Sprinkler
 - D) Sub-surface
67. What is the relation between Duty (D), Delta (Δ) and Base period (B) ?
- A) $\Delta = (86.4B/D)$
 - B) $\Delta = (864B/D)$
 - C) $\Delta = (8.64B/D)$
 - D) $\Delta = (8640B/D)$

68. What is the first watering before sowing the crop ?
A) Kor watering B) Paleo C) Delta D) Duty
69. Which is called as safety valve of a dam ?
A) Drainage gallery B) Inspection gallery
C) Spill way D) Outlet sluices
70. What is the classification of dam based on use ?
A) Detention B) Gravity C) Rigid D) Buttress
71. When does hydrograph called as unit hydrograph ?
A) 1 cm of runoff from rainfall B) 3 cm of runoff from rainfall
C) 1 mm of runoff from rainfall D) 3 mm of runoff from rainfall
72. Which is the main function of diversion head work of a canal ?
A) To remove silt B) To control floods
C) To store water D) To raise water level
73. Which is the main factor for selection of site for a reservoir ?
A) Maximum runoff B) Maximum percolation
C) Wide opening D) Minimum runoff
74. What is the name of the structure placed in river to increase the depth of water ?
A) Barrage B) Weir C) Notch D) Crest
75. Which element of hydroelectric power plant reduce the water hammer pressure formed in the penstock ?
A) Valves B) Surge tank C) Turbines D) Draft tubes
76. Which canal is also known as ridge canal ?
A) Contour B) Watershed C) Side slope D) Main

77. What is also known as canal fall ?
- A) Canal siphon B) Canal drop
C) Super passage D) Aqueduct
78. Which cross drainage work is constructed to carry canal below drainage ?
- A) Aqueduct B) Super passage
C) Level crossing D) Inlet
79. Which of the following is the cause of the property that allows liquid to resist an external force ?
- A) Elasticity B) Compressibility
C) Viscosity D) Surface tension
80. Barometer is used to measure
- A) Pressure in pipes, channel etc.
B) Atmospheric pressure
C) Very low pressure
D) Difference of pressure between two points
81. Which of the following statements is/are correct about units ?
- i. Time is a fundamental unit.
ii. In FPS system of units, unit of length is Foot.
iii. Area is a derived unit.
- A) Only (i and ii) B) Only (i and iii)
C) All of the above (i, ii and iii) D) Only (ii and iii)
82. 2 kilograms is equal to _____ pounds.
- A) 4.41 B) 4.14 C) 5.004 D) 4.61
83. What is the base of a triangle having an area of 50 cm^2 and height 100 mm ?
- A) 10 mm B) 10 cm C) 5 cm D) 15 mm

84. A wire bend in the form of a circle of radius 35 cm was reshaped to a square. Then what is the length of one side of that square ?
A) 45 cm B) 55 cm C) 35 cm D) 65 cm
85. How many litres of water can be stored in a water tank having length = 1 metre, width = 0.5 metre and height = 0.8 metre ?
A) 100 B) 200 C) 300 D) 400
86. How many spherical balls of radius 1 cm can be made from a sphere of 15 cm radius ?
A) 3375 B) 3475 C) 3575 D) 3275
87. Which of the following statements is/are correct about energy ?
i. Energy of a body is its capacity to do work.
ii. Unit of energy is same as the unit of work.
iii. Energy of one form cannot be transformed into energy of another form.
A) Only (i) B) Only (i and ii)
C) All of the above (i, ii and iii) D) Only (ii and iii)
88. When an external force acts on a material, there is a change in its dimension and shape. This deformation is called
A) Young's modulus B) Modulus of rigidity
C) Stress D) Strain
89. Which of the following statements is/are correct about friction ?
i. Limiting friction is less than rolling friction.
ii. Rolling friction is equal to sliding friction.
iii. Rolling friction is always less than limiting friction.
A) Only (i) B) Only (ii)
C) Only (iii) D) All of the above (i, ii and iii)

90. The rate of change of displacement of a body in motion in a given direction is called
A) Velocity B) Acceleration C) Deceleration D) Momentum
91. What is mechanical advantage of a simple machine ?
A) $\frac{\text{Effort}}{\text{Load}}$ B) $\frac{\text{Load}}{\text{Effort}}$
C) $\frac{\text{Distance moved by the load}}{\text{Distance moved by the effort}}$ D) $\frac{\text{Distance moved by the effort}}{\text{Distance moved by the load}}$
92. The positive bending moment in a beam is often called _____ moment.
A) Polar B) Hogging C) Sagging D) None of these
93. Which of the following statements is/are correct about explode command ?
i. Breaks a compound object into its component objects.
ii. When you start explode command, AutoCAD prompt you to select one or more complex objects.
iii. If objects can't be exploded, AutoCAD displays how many objects could not be exploded at command line.
A) Only (ii and iii) B) Only (i and ii)
C) Only (i and iii) D) All of the above (i, ii and iii)
94. Which among the following command is used to create a region or a polyline from an enclosed area ?
A) BLOCK B) HATCH
C) BOUNDARY D) BSAVE
95. Which of the following statements is/are correct about snap mode ?
i. Restricts cursor movement to specified grid intervals.
ii. Tracks the cursor to increments along polar alignment paths.
iii. Snap mode is toggled using the F7 Key.
A) Only (i and ii) B) Only (i and iii)
C) Only (iii) D) All of the above (i, ii and iii)

96. Which of the following tool is used to connect two objects with an arc with a specified radius ?
- A) Scale B) Fillet
C) Array D) Rotate
97. Which of the following statements is/are correct about ortho mode ?
- i. If ortho mode is enabled, you will only be allowed to draw lines along the UCS axis.
 - ii. If ortho mode is enabled, you will be able to draw lines at any angle.
 - iii. To toggle ortho mode on and off, press the F8 key.
- A) Only (i and ii) B) Only (iii)
C) Only (i and iii) D) All of the above (i, ii and iii)
98. In AutoCAD, the keyboard shortcut Ctrl + 1 is used to
- A) Print the sheet
B) Show drawing area only
C) Show properties palette
D) Open Quick Calculator
99. Which of the following command is used to add or edit plotter configuration ?
- A) PLOTTER B) PLOTSTYLE
C) PLOTTERMANAGER D) PLOT
100. Which of the following in AutoCAD displays the cursor location, drawing tools and tools that affect your drawing environment ?
- A) File Menu B) Status Bar
C) Application Menu D) Ribbon Panel
-

Space for Rough Work

