



DEV LULLA SIR'S

# Lulla Classes



103, Welcome Shopping Centre, Old Padra Road, Baroda. Ph.: 2355493, 6532751

## SCHOLARSHIP CUM ADMISSION TEST

LSAT MOVING TO STD 10

Time 1 hrs Marks : 150

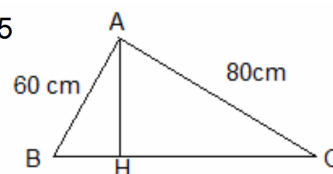
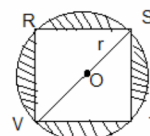
### General Instructions

1. This booklet consists of 50 questions. Time allowed will be 60 minutes
2. The answer sheet, OMR, is provided separately. DO NOT tamper with/ Mutilate the OMR or the booklet
3. Submit OMR sheet when asked for by the invigilator. Write all the details which are requested for in capital letters.
4. Side spaces of the question paper booklet may be used for rough work.
5. Marking System: The total test is of 150 marks. +3 marks will be awarded for every correct answer and -1 will be awarded for every incorrect answer.

### ANSWER THE BELOW GIVEN QUESTIONS ON THE OMR SHEET ONLY

1. An electron revolves around the nucleus in circular orbit. The necessary centripetal force develops from  
(a) Nuclear force (b) Electrostatic force (c) Gravitational force (d) Magnetic force
2. Two masses  $m$  &  $M$  are kept at a distance  $r$ . The ratio of force exerted on  $m$  due to  $M$  and on  $M$  due to  $m$  is equal to  
(a)  $m : M$  (b)  $M : m$  (c)  $m : M$  (d)  $1 : 1$
3. The mass of an object at the centre of Earth will be  
(a) zero (b) infinity (c) Remains unchanged (d) None
4. The weight of an object is 100N. Its mass will be ( $g = 10m/s^2$ )  
(a) 10 kg (b) 100 kg (c) 1000 kg (d) 1 kg
5. If an object covers distance directly proportional to the square of the time lapsed, then the  
(a) acceleration is  
Increasing (b) Decreasing (c) Constant (d) None
6. On a planet, a freely falling object falls through a height  $h$  in  $\sqrt{h}$  secs. Find the acceleration due to gravity on that planet.  
(a)  $2 m/s^2$  (b)  $4 m/s^2$  (c)  $6 m/s^2$  (d)  $8 m/s^2$
7. Some statements about the Rutherford's & particle scattering experiment are given  
(i) As most of the  $\alpha$  particles passed through the gold foil without getting deflected the positive charge of the atom acquires the entire space.  
(ii) As very few particles are deflected from their path, very little space inside the atom is empty  
(iii) As a very small fraction of  $\alpha$  particles were deflected by  $180^\circ$  all the positive charge and mass of a gold atom were concentrated in a very small volume within the atom.  
(a) (i) & (ii) (b) (i) & (iii) (c) (ii) & (iii) (d) (iii) only
8. Filtration as a method of separation can be used for mixtures that are  
(a) homogeneous and liquid in gas mixtures (b) heterogeneous and liquid in liquid mixtures  
(c) homogeneous & solid in liquid mixtures (d) heterogeneous & solid in liquid mixtures
9. Which of the following is not a unit of energy.  
(a) Calorie (b) Newton metre (c) eV (d) Watt
10. Work done by gravitational force on a ball moving upwards is  
(a) Positive (b) Negative (c) Zero (d) Depends
11. The animals having two chambered heart belongs to class -  
(a) Amphibia (b) Reptilia (c) Pisces (d) Aves

12. Which of the following is raised as good for the live stock ?  
 (a) Oats (b) Sorghum (c) Hentil (d) Millets
13. The Endoplasmic Reticulum membrane is similar in structure to  
 (a) Nuclear membrane (b) Plasma membrane  
 (c) Mitochondrial membrane (d) Membrane in plastid
14. The cell organelle in which materials such as starch, oils & protein granules are stored is -  
 (a) Golgi apparatus (b) Chloroplasts (c) Chromoplasts (d) Leucoplasts
15. Name an important factor that decides biodiversity in a particular area -  
 (a) The quality of top soil (b) The quantity of top soil  
 (c) The quality of ground water (d) The quantity of ground water.
16. For which of the following disciplines is nobel prize awarded.  
 (a) Physics & Chemistry (b) Physiology or medicine  
 (c) Literature, peace & economics (d) All of the above
17. India has largest deposits of ----- in the world.  
 (a) Gold (b) Copper (c) Mica (d) None of the above
18. Logarithm tables were invented.  
 (a) John Napier (b) John Doe (c) John Harrison (d) John Douglas
19. With which sport is Jules Rimet trophy associated  
 (a) Basket ball (b) Football (c) Hockey (d) Golf
20. Milkha Singh stood ----- in 1960 olympics in athletics  
 (a) Fourth in 100m final (b) second in 100m final (c) Eight in 50 km walk (d) first in 800m final
21. In the given figure, RSTV is a square inscribed in a circle with centre O and radius  $r$ . The total area of the shaded region is -----.  
 (a)  $r^2(\pi - 2)$  (b)  $2r^2(2 - \pi)$  (c)  $\pi(r^2 - 2)$  (d)  $8r^2 - 8r$
22. A right cylindrical vessels is full with water. How many right cones having same diameter and height as that of right cylinder will be needed to store that water ?  
 (a) 2 (b) 4 (c) 3 (d) 5
23. ABC is a right angled triangle with  $\angle BAC = 90^\circ$ . AH is drawn Perpendicular to BC. If AB = 60 cm and AC = 80cm. then BH=-----  
 (a) 36 cm (b) 32 cm  
 (c) 24 cm (d) 30 cm
24. If the area of a triangle with base  $x$  is equal to area of a square of side  $x$ , then the altitude of the triangle is -----.  
 (a)  $\frac{x}{2}$  (b)  $x$  (c)  $\sqrt{2}x$  (d)  $2x$
25. If a wire is bent into the shape of a square, then the area of the square is 81 sq.cm. When the wire is bent into a semi-circular shape, the area of the semi-circle will be -----.  
 (a)  $22 \text{ cm}^2$  (b)  $44 \text{ cm}^2$  (c)  $77 \text{ cm}^2$  (d)  $154 \text{ cm}^2$
26. A metal sheet 27 cm long, 8 cm broad and 1 cm thick is melted to form a cube. The difference between the surface areas of two solids is -----.  
 (a)  $284 \text{ cm}^2$  (b)  $286 \text{ cm}^2$  (c)  $296 \text{ cm}^2$  (d)  $280 \text{ cm}^2$
27. Three cubes whose edges are 3cm, 4cm and 5 cm respectively are melted without any loss of metal into a single cube. The edge of the new cube is -----.  
 (a) 6cm (b) 12 cm (c) 9 cm (d) 10 cm
28. The ratio which  $\left(\frac{1}{3} \text{ of Rs.9.30}\right)$  bears to  $(0.6 \text{ of Rs.1.55})$  is -----.  
 (a) 1 : 3 (b) 10 : 3 (c) 3 : 10 (d) 3 : 1



29. An agent receives a commission of Rs.73.00 on sales of Rs.1000.00 The commission will he get on sales of Rs.100.00 is -----.
- (a) Rs.7.30 (b) Rs.7.00 (c) Rs.6.00 (d) Rs.6.30
30. A cistern has two inlets A and B which can fill it in 12 minutes and 15 minutes respectively. An outlet C can empty the full cistern in 10 minutes. If all the three pipes are opened together in the empty tank, time taken to fill the tank completely is -----.
- (a) 20 minutes (b) 10 minutes (c) 15 minutes (d) 5 minutes
31. The factors of  $\frac{x^2}{4} - \frac{y^2}{9}$  are -----.
- (a)  $\left(\frac{x}{4} + \frac{y}{9}\right)\left(\frac{x}{4} - \frac{y}{9}\right)$  (b)  $\left(\frac{x}{2} + \frac{y}{9}\right)\left(\frac{x}{2} - \frac{y}{9}\right)$  (c)  $\left(\frac{x}{2} + \frac{y}{3}\right)\left(\frac{x}{2} - \frac{y}{3}\right)$  (d) Both (a) and (b)
32. The real factors of  $x^2 + 16$  are -----.
- (a)  $(x^2 + 2)(x^2 - 2)$  (b)  $(x + 4)(x - 4)$  (c) Does not exist (d)  $(x + 2)(x - 2)$
33. The factors of  $\sqrt{3}x^2 + 11x + 6\sqrt{3}$  are -----.
- (a)  $(x - 3\sqrt{3})(\sqrt{3}x + 2)$  (b)  $(x - 3\sqrt{3})(\sqrt{3}x - 2)$  (c)  $(x + 3\sqrt{3})(\sqrt{3}x + 2)$  (d)  $(x + 3\sqrt{3})(\sqrt{3}x - 2)$
34. Reducing the expression  $\frac{a^2 - b^2}{ab} \cdot \frac{ab - b^2}{ab - a^2}$  to lowest terms, we get -----.
- (a)  $\frac{a}{b}$  (b)  $\frac{a^2 - 2b^2}{ab}$  (c)  $a^2$  (d)  $a - 2b$
35. When the price of a product was decreased by 10%, the number sold increased by 30%. What was the increase on the total revenue ?
- (a) 23% (b)  $16\frac{2}{3}\%$  (c) 15% (d) 17%
36. A grocer purchased 80 kg of sugar at Rs.13.50 per kg and mixed it with 120 kg sugar at Rs.16 per kg. At what rate should he sell the mixture (per kg) to gain 16% ?
- (a) Rs.15.30 (b) Rs.19.18 (c) Rs.17.40 (d) Rs.18.66
37. A book was sold for Rs.27.50 with a profit of 10%. If it were sold for Rs.25.75, then what would have been the percentage of profit or loss ?
- (a) Loss, 3% (b) Profit, 2% (c) Profit, 3% (d) Loss, 2%
38. Sugar is bought at Rs.16.20 per kg and sold at Rs.17.28 per kg. The gain percent is -----.
- (a)  $6\frac{2}{3}\%$  (b)  $3\frac{1}{3}\%$  (c) 10% (d)  $10\frac{2}{3}\%$
39. The selling price of goods which cost Rs.10 and were sold at a gain of 10% is -----.
- (a) Rs.12 (b) Rs.18 (c) Rs.11 (d) Rs.11.10
40. The simple interest at  $x\%$  for  $x$  years will be Rs.  $x$  on a sum of -----.
- (a) Rs.  $x$  (b) Rs.  $100x$  (c) Rs.  $\left(\frac{100}{x}\right)$  (d) Rs.  $\left(\frac{100}{x^2}\right)$

**Read the passage and answer the following questions no 41 to 45**

Bansi Lal's monthly income has almost trebled – from Rs 5,000 to Rs.15,000 – since he switched over from his rickety pedal rickshaw a battery –powered one. The advent of e-rickshaws, so called because they run on batteries and are thus non-polluting, has enabled thousands of erstwhile hand-to-mouth rickshaw –pullers read a better life in the capital. But Bansi Lal's good fortunes offered a massive hiccup when the erstwhile UPA government through a notification declared these vehicles as illegal – the authorities impounded nearly 1000 of the vehicles throwing a care among the almost 30,000 e-rickshaw operators from being rendered without any means of livelihood. "My life has become better ever since I have bought an e-rickshaw. I don't have to pedal my cycle rickshaw anymore and be reduced to a physical wreck at the end of the day. Besides, the new one accommodates more people and brings me more money," forty-year-old Bansi Lal. Although environmentalist have welcomed the move for creating a new class of "intermediary" public transport which has "zero emission", they say the



government needs to set down frame the guidelines for the safety of the drivers and the passengers. In reducing pollution and dependence on cars, this new class of transport will pay a very important role. But the government needs to make some rules so the safety of the passenger. Can be ensured. The e-rickshaws first appeared in Delhi ahead of the 2010 Commonwealth Games but took almost three years The mushrooming of these environment friendly rickshaw is arguably an offshoot of the failure of Delhi Metro's feeder bus service which was meant to ferry people from metro stations to their residential localities. But, initially started as a means for last mile connectivity in residential neighbourhoods, these battery operated rickshaw are now plying on the city's arterial roads and across busy flowers. Rash Driving by untrained drivers is another cause for concern. They can also be spotted jumping traffic signals. This new This new mode of transport has come as boon for thousands who have new employment opportunity. Besides, its assemblers tend to gain with the Centre now according it a legal status.

41. Why is e-rickshaw a bane ?  
 A : it has increased employment opportunities.  
 B : e-rickshaw are environment friendly.  
 C : gave a better life to rickshaw pullers.  
 D : unsafe traffic issues like rash driving and jumping signals.  
 (a) A and B only (b) A, B and C (c) A, B, C and (d) D only
42. Which of the following statements is false about e-rickshaw ?  
 (a) e-rickshaws are battery operated. (b) e-rickshaws first appeared around commonwealth games.  
 (c) e-rickshaws are pollution friendly (d) e-rickshaws are illegal.
43. How are the e-rickshaws a boon for the rickshaw pullers ?  
 (a) Hard work has reduced and they are earning enough for a better lifestyle.  
 (b) They can now drive instead of pulling of rickshaw.  
 (c) They can carry more passengers at a time.  
 (d) All of these.
44. What was the core purpose behind the launch of e-rickshaws ?  
 (a) For taking players participating in Commonwealth Games from one stadium to another.  
 (b) For easing the physical work of rickshaw pullers.  
 (c) Means for small connectivity in residential areas.  
 (d) As a substitute to feeder buses.
- Read this sentence from the passage.  
 "The mushrooming of these environment friendly rickshaws is arguably an offshoot of the failure of Delhi Metro's feeder bus service which was meant to ferry people from metro stations to their residential localities."
45. What does the word mushrooming means in the context ?  
 (a) Forming a shape-resembling that of a mushroom. (b) Develop rapidly  
 (c) Environment where mushrooms are growing (d) Speed

**Pick out the nearest correct meaning of synonym of the words given below :**

46. EPAULETTE  
 (a) Ammunition (b) Shoulder ornament (c) Equipment (d) Cockpit

**Pick out the antonyms of the words given below :**

47. SOLICITOUS  
 (a) Mild (b) Showing no concern for (c) Grateful (d) Cheerful

In each of the following passages, there are blanks each of which has been numbered. These numbers are printed below the passage and against each, some words are suggested, one of the which first the blank appropriately. Find out the appropriate words.

Women have (48) made (49) in the corporate workplace but certainly not as much as they had (50) .

48. (a) perhaps (b) seldom (c) optimistically (d) undoubtedly  
 49. (a) progress (b) efforts (c) attempts (d) decisions  
 50. (a) predisposed (b) prescribed (c) expected (d) informed

### Solutions

1.	(b) Electrostatic force	26.	(b) $286\text{ cm}^2$
2.	(d) 1 : 1	27.	(a) 6cm
3.	(c) Remains unchanged	28.	(b) 10 : 3
4.	(a) 10 kg	29.	(a) Rs.7.30
5.	(c) Constant	30.	(a) 20 minutes
6.	(a) $2\text{ m/s}^2$	31.	(c) $\left(\frac{x}{2} + \frac{y}{3}\right)\left(\frac{x}{2} - \frac{y}{3}\right)$
7.	(d) (iii) only	32.	(c) Does not exist
8.	(b) heterogeneous and liquid in liquid mixtures	33.	(d) $(x + 3\sqrt{3})(\sqrt{3}x + 2)$
9.	(d) Watt	34.	(a) $\frac{a}{b}$
10.	(b) Negative	35.	(d) 17%
11.	(c) Pisces	36.	(c) Rs.17.40
12.	(a) Oats	37.	(c) Profit , 3%
13.	(b) Plasma membrane	38.	(a) $6\frac{2}{3}\%$
14.	(d) Leucoplasts	39.	(c) Rs.11
15.		40.	(c) Rs. $\left(\frac{100}{x}\right)$
16.	(d) All of the above	41.	(d)
17.	(c) Mica	42.	(c)
18.	(a) John Napier	43.	(d)
19.	(b) Football	44.	(c)
20.	(a) Fourth in 100m final	45.	(b)
21.	(a) $r^2(\pi - 2)$	46.	(b)
22.	(c) 3	47.	(b)
23.	(a) 36 cm	48.	(d)
24.	(d) $2x$	49.	(a)
25.	(c) $77\text{ cm}^2$	50.	(c)