KENDRIYA VIDYALAYA GACHIBOWLI, HYDERABAD – 32

SAMPLE PAPER 04 FOR SA – II (2015-16)

SUBJECT: MATHEMATICS

BLUE PRINT : SA-II CLASS IX

Unit/Topic	MCQ (1 mark)	Short answer (2 marks)	Short answer (3 marks)	Long answer (4 marks)	Total
Algebra Linear Equations in two variables	--	--	6(2)*	4(1)*	**10(3)***
Geometry Quadrilaterals, Area, Circles & Construction	1(1)	6(3)	15(5)	16(4)	**38(13)**
Mensuration Surface Areas and Volumes	2(2)	2(1)	6(2)	12(3)	**22(8)**
Statistics	1(1)	--	3(1)	8(2)	**12(4)**
Probability	--	4(2)	--	4(1)	**8(3)**
Total	**4(4)**	**12(6)**	**30(10)**	**44(11)**	**90(31)**

**The test of OTBA for SA-II will be from Unit-II Linear Equation in Two variables*

MARKING SCHEME FOR SA – II

SECTION	MARKS	NO. OF QUESTIONS	TOTAL
VSA	1	4	04
SA – I	2	6	12
SA – II	3	8	24
LA	4	10	40
OTBA	3	2	6
	4	1	4
GRAND TOTAL			**90**

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SAMPLE PAPER 04 FOR SA – II (2015-16)

SUBJECT: MATHEMATICS **MAX. MARKS : 90**

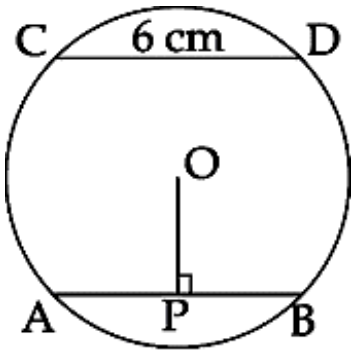
CLASS : IX **DURATION : 3 HRS**

General Instructions:

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A consists 4 questions each carry 1 marks, Sections B consists 6 questions each carry 2 marks, Sections C consists 8 questions each carry 3 marks, Sections D consists 10 questions each carry 4 marks and Sections E consists 2 questions of 3 marks 1 question of 4 marks from OTBA Text Theme
3. There is no overall choice.
4. Use of Calculator is prohibited.

SECTION – A

1. In the figure, AB and CD are two chords equidistant from the centre O. OP is the perpendicular drawn from centre O to AB. If CD = 6 cm. find PB



2. If the diameter of the base of a closed right circular cylinder be equal to its height 'h', find total surface area of cylinder.

3. If the mean of the observations: x, x + 3, x + 5, x+ 7 and x + 10 is 9, then find the value of x.

4. If the radius of the sphere is doubled, find the ratio of volume of the new sphere to the original sphere.

SECTION – B

5. DEFG is a parallelogram with GH⊥DE. If GH = 10 cm and GF=12 cm, find ar (ΔGEF) and ar (DEFG).

6. In a bottle there are 7 red buttons, 5 green buttons and 8 purple buttons. What is the probability that randomly drawn button from the bottle is a purple button ? If one extra green button is put in side the bottle, what will be the probability that randomly drawn button is purple ?

7. The blood group of 60 students are selected of class IX and recorded as below :

Blood group	**A**	**B**	**AB**	**O**	**Total**
Number of Students	12	18	16	14	60

If a student is chosen at random find the probability that it is :
(i) A blood group student (ii) O blood group student

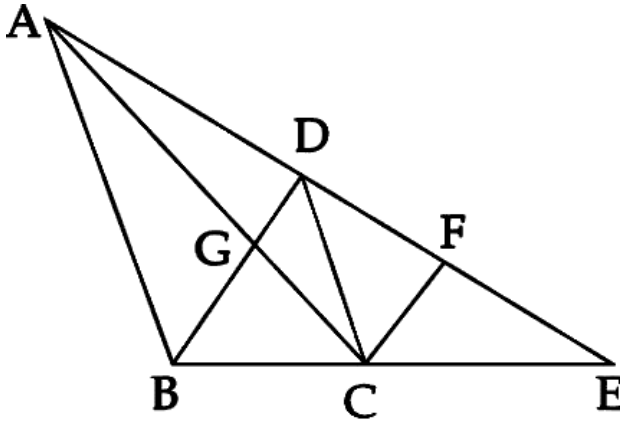
8. Draw any acute angle. Name as ∠XYZ. Bisect it using compass.

9. In a quadrilateral ABCD, $\angle B = 45°$, $\angle D = 3\angle B$, and $\angle C = 2\angle B$. Find the value of ∠A.

10. Determine the volume of a conical vessel having radius of the base as 5 cm and its slant height as 13 cm. (Use $\pi = 3.14$)

SECTION – C

11. AB and CD are two parallel chords of a circle whose diameter is AC. Prove that AB = CD.



12. Draw a line segment PQ of length 6 cm. Construct perpendicular at point P. Name it as l . Also construct perpendicular bisector of PQ. Name it as m. Is $l \parallel m$?

13. ABCD is a square. Prove that its diagonals are equal and bisect each other at right angles.

14. Draw an angle of 120^0 using protractor. Bisect it and verify the result.

15. Find the mean of the following observations:

Variate (x)	4	6	8	10	12
Frequency (f)	12	10	9	8	5

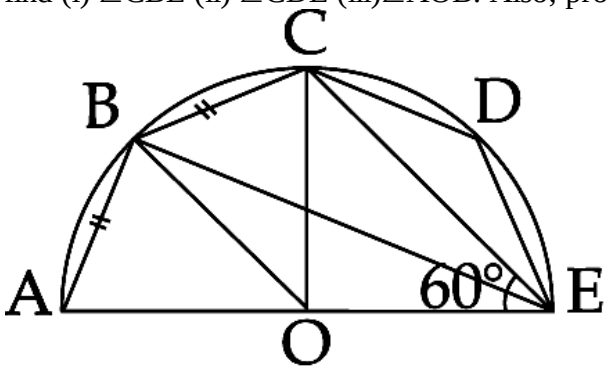
16. The radius and height of a cylinder are in the ratio 5 : 7. If its volume is 4400 cm^3, find the radius of the cylinder.

17. Two cubes of edge 14 cm each are joined end to end to form a cuboid. Find the total surface area of the resulting cuboid.

18. In figure, D and F are points on side AE of ΔABE. Through point D a line DC is drawn which is parallel to AB and meets BE in C. Prove that ar (ΔACF) = ar (BCFD).

SECTION – D

19. In the given figure, O is the centre and AE is a diameter of the semicircle ABCDE. If AB = BC and $\angle AEC = 60^0$, then find (i) $\angle CBE$ (ii) $\angle CDE$ (iii)$\angle AOB$. Also, prove that BO || CE.



20. In ΔABC, D, E and F are mid-points of sides BC, AC, and AB respectively. If ar (ΔDEF) $= 12$ cm^2, find ar(ΔABC).

21. Construct a right triangle whose base is 7 cm and sum of its hypotenuse and the other side is 16 cm.

22. EFGH is a rectangle. A, B, C and D are mid – points of the sides EF, FG, GH and EH respectively. Show that ABCD is a rhombus.

23. A conical tent has the area of its base as 154 sq m and its curved surface area as 550 sq m. Find the volume of the tent.

24. Ramesh threw a party on the recovery of his injured friend from the accident. Ramesh served him and 5 other friends with chilled juice which was in cylindrically shaped cans of radius 4.2 cm and height 15 cm. Find the total volume of juice they drink and total surface area of 7 juice cans. Which value is depicted by Ramesh ?

25. The volumes of the two spheres are in the ratio 64 : 343. Find the ratio of their surface areas.

26. The points scored by a basket-ball team in a series of matches are as follows:

17, 2, 7, 27, 25, 5, 14, 18 , 10, 24, 10, 8, 7, 10.

Find mean, median and mode for the data.

27. Construct a histogram and frequency polygon for the following frequency distribution:

Weight(in kg)	40-45	45-50	50-55	55-60	60-65	65-70
No. of persons	15	25	28	15	12	5

28. A parent has collected data of number of school based on the monthly fees, so that he can choose the school for admission of his child. Data is as follows:

Monthly School Fee (in Rs)	250-500	500-750	750-1000	1000-1250	1250-1500	1500-1750	1750-2000
No. of Schools	14	16	18	12	14	8	8

If a school is selected at random, find the probability that the school is having (i) minimum fee (ii) maximum fee (iii) fee of atmost Rs 1000 (iv) fee between Rs 1000 and Rs 1500.

SECTION – E (OTBA)

THEME – 2: ENERGY CONSUMPTION AND ELECTRICITY BILL

29. What is Obesity? Why obesity is such a serious issue? **(3 marks)**

30. The height of Amit is 200 cm. If x and y represents the BMI and the weight, respectively, then form a linear equation to represent the given information. Draw its graph also. **(3 marks)**

31. Shreya wants to burn 330 k cal in a day and she work out at the most for 45 minutes. She feels that running up stairs and jogging are most convenient way for her. Write the linear expressions and draw the graph. **(4 marks)**