This Question Paper contains 4 Printed Pages.

16E(A)

MATHEMATICS, Paper - II

(English version)

(Parts A and B)

[Maximum Marks : 40

Time : 2 hrs. 45 min.]

Instructions :

- Read all questions. 15 minutes of time is allotted exclusively for reading the 1. Question Paper and 2.30 hours for writing the answers.
- Part A answers should be written in separate answer book. 2.
- There are three sections in Part-A. 3.
- Answer all questions. 4.
- Every answer should be written visibly and clearly. 5.
- There is internal choice in section III. 6.

Part - A

Time : 2 hours

Marks: 30

SECTION - I

[1]

 $(Marks: 4 \times 1 = 4)$

Answer all the questions. (i) Note:

Each question carries 1 mark. (ii)

In \triangle ABC, LM // BC and $\frac{AL}{LB} = \frac{2}{3}$, AM = 5 cm, find AC. 1.

Evalute sin 15° - sec 75°. 2.

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B

- 3. A box contains 3 blue and 4 red balls. What is the probability that the ball taken out randomly will be red ?
- 4. The mean for a grouped data is calculated by $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$.

What do the terms ' f_i ' and ' d_i ' represent in the above formula ?

SECTION - II

(Marks: 5×2=10)

Note: (i) Answer all questions.

(ii) Each question carries 2 mark

- 5. If the distance between two points \mathbf{w} , 1) and (-1, 5) is '5', find the value of 'x'.
- Find the length of the tangent from a point 13 cm away from the centre of the circle of radius 5 cm.

7. If $\cos A = \frac{7}{25}$, then find $\sin A$ and $\operatorname{cosec} A$. What do you observe?

- 8. Rehman observed the top of a temple at an angle of elevation of 30°, when the observation point is 24 m. away from the foot of the temple. Find the height of the temple.
- 9. Write mid-values of the following frequency distribution.

	Class interval	8-11	12-15	16-19	20-23	24-27	28-31	32-35
改 日 (5)	Frequency	4	4	5	13	20	14	8

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B

SECTION - III

 $(Marks: 4 \times 4 = 16)$

- Note: (i) Answer all the questions.
 - (ii) Choose any one from each question.
 - (iii) Each question carries 4 marks.

10. (a) Prove that $(\sin A + \csc A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$.

OR

(b) ABC is a right angled triangle, right angled at C. Let BC = a, CA = b, AB = c and let p be the length of perpendicular from C on AB.

Prove that (i)
$$pc = ab$$
 and (ii) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$.

11. (a) Find the median of the following data.

Class interval	11-15	16-20	21-25	26-30	31-35	36-40
Frequency	3	5	9	12	.7	4

OR

(b) In what ratio, does the point (-4, 6) divide the line segment joining the points A(-6, 10) and B(3, -8)?

12. (a) Two dice are thrown at the same time. What is the probability that the sum of two numbers appearing on the top of the dice is (a) 10, (b) less than or equal to 12, (c) a prime number, (d) multiple of '3'?

OR

(b) A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground by making 30° angle with the ground. The distance between the foot of the tree and the top of the tree on the ground is 6 m. Find the height of the tree before falling down. 13. (a) Construct a triangle PQR, where QR = 5.5 cm, $\angle Q = 65^{\circ}$ and

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B

PQ = 6 cm. Then draw another triangle, where sides are $\frac{2}{3}$ times of the corresponding sides of ΔPQR .

OR

(b) Draw a circle of radius 4 cm and down a pair of tangents to the circle, which are intersecting each otherwork away from the centre.

[4]

MARCH, 2019

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16E(B)

MATHEMATICS, Paper - II

(English version)

(Parts A and B)

Time : 2 hrs. 45 min.]

[Maximum Marks : 40

Instruction : Write the answers to the questions in this Part-B on the Question paper itself and attach it to the--iswer book of Part-A.

Part B

Time : 30 minutes

Marks: 10

E

SECTION · IV

(Marks: $20 \times \frac{1}{2} = 10$)

Note :

- (i) Answer.all the questions.
- (ii) Each question carries $\frac{1}{2}$ mark.
- (iii) Marks will not be awarded in any case of over-written, rewritten or erased answers.
- (iv) Each question has four options. Write the CAPITAL LETTERS

 (A, B, C, D) showing the correct answer for the following questions in
 the brackets provided against them.

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29. The centre of the circle is (2, 1) and one end of the diameter is (3, -4). Another end of the diameter is
(A) (1, 6) (B) (-1, -6)
(C) (1, -6) (D) (-1, 6)

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30. The letter that represents $\frac{x_i - \alpha}{h}$, which is used in measuring

(A) d_i (B) f_i

(C) u_i

mean is

31. In the given figure, area of Δυργ 18

