

G.PULLAIAH COLLEGE OF ENGINEERING & TECHNOLOGY (AT)

I B.Tech.I-SEM I-MID Exam (Descriptive) 2016-17

(Common to all Branches)

SET NO-I

Sub: MATHEMATICS-I

Date:19/09/2016

Time: 90mins

Max.Marks: 30

PART - A

ANSWER ALL QUESTIONS.EACH QUESTION CARRY EQUAL MARKS

5 X 2 = 10M

1. A) Solve $(x^2 - ay)dx = (ax - y^2)dy$
- B) Find the O.T's of given family of curves is $ay^2 = x^3$, where a is parameter
- C) Solve $(D^4 - 2D^3 - 3D^2 + 4D + 4)y = 0$
- D) Solve $(4D^2 - 4D + 1)y = 100$
- E) Solve $(2x^2D^2 + 3xD - 1)y = x$

PART - B

ANSWER ALL QUESTIONS

2 x 10= 20M

2. a) Solve $\frac{dy}{dx} + yx = y^2 e^{\frac{x^2}{2}} \sin x$

b) The rate at which bacteria multiply is proportional to the instantaneous N numbers present. If the original number doubles in 2 hrs. When it will be tripled?

(OR)

3. a) solve $(D^3 + 2D^2 + D)y = e^{2x} + x^2 + x + \sin 2x$

b) Solve $(D^2 - 4)y = x \sin \lambda x$

4.a) Solve $(D^2 + 1)y = \operatorname{cosec} x$, By the method of variation of parameters

b) Solve $((x + 1)^2 D^2 - 3(x + 1)D + 4)y = x^2 + x + 1$

(OR)

5.a) Solve $(D^2 + a^2)y = \cot ax$, By the method of variation of parameters

b) Solve $(x^3 D^3 + 3x^2 D^2 + xD + 1)y = x + \log x$

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I B.Tech.I-SEM I-MID Exam (Descriptive) 2016-17

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SET NO-II

Sub: MATHEMATICS-I

Date:19/09/2016

Time: 90mins

Max.Marks: 30

PART - A

ANSWER ALL QUESTIONS.EACH QUESTION CARRY EQUAL MARKS

5 X 2 = 10M

- 1.A) Solve $\frac{dy}{dx} + y \cot x = 5e^{\cos x}$
- B) Solve $(D^3 - 6D^2 + 11D - 6)y = e^{-2x} + e^{-3x}$
- C) Find the O.T's of the given family of curves $r = a\theta$, where a is parameter
- D) Solve $(D^2 + 4)y = \sin 2x$
- E) Solve $(x^2 D^2 - 2xD - 4)y = x^4$

PART - B

2 x 10= 20M

ANSWER ALL QUESTIONS

2.A) The temp of a body drops from 100°C to 75°C in 10 min. When the air temp is 20°C. What will be its temp after half an hour? When will be the temp is 25°C

B) find the O.T 's of the given family of curves is $r = 2a(\cos \theta + \sin \theta)$, where a is parameter

(OR)

3.A) Solve $(D^2 - 4D + 4)y = e^{2x} + \cos 2x + e^x \sin 2x$

B) Solve $(D^2 + 2D + 1)y = x \cos x$

4.A) Solve $(D^2 + a^2)y = \tan ax$, By Using Method of variation of parameters

B) Solve $((3x + 2)^2 D^2 + 3(3x + 2)D - 36)y = 3x^2 + 4x$

(OR)

5. A) Solve $(D^2 + a^2)y = \cot ax$, By the method of variation of parameters

B) Solve $(x^3 D^3 + 3x^2 D^2 + xD + 1)y = x + \log x$

G.PULLAIAH COLLEGE OF ENGINEERING & TECHNOLOGY (AT)

IB.Tech.I-SEM I-MID Exam (Descriptive) 2016-17

(Common to all Branches)

SET NO-III

Sub: MATHEMATICS-I

Date:19/09/2016

Time: 90mins

Max.Marks: 30

PART - A

ANSWER ALL QUESTIONS.EACH QUESTION CARRY EQUAL MARKS

5 X 2 = 10M

1. A)Solve $(x^2 - ay)dx = (ax - y^2)dy$

B) Find the O.T's of given family of curves is $ay^2 = x^3$, where a is parameter

C) Solve $(D^4 - 2D^3 - 3D^2 + 4D + 4)y = 0$

D)Solve $(D^2 + 4)y = \sin 2x$

E) Solve $(x^2D^2 - 2xD - 4)y = x^4$

PART - B

2 x 10= 20M

ANSWER ALL QUESTIONS

2.A) The temp of a body drops from 100°C to 75°C in 10 min. When the air temp is 20°C. What will be its temp after half an hour? When will be the temp is 25°C

B) find the O.T 's of the given family of curves is

$r = 2a(\cos \theta + \sin \theta)$, where a is parameter

(OR)

3.a) solve $(D^3 + 2D^2 + D)y = e^{2x} + x^2 + x + \sin 2x$

b) Solve $(D^2 - 4)y = x \sin \lambda x$

4.A)Solve $(D^2 + a^2)y = \tan ax$,By Using Method of variation of parameters

B) Solve $((3x + 2)^2D^2 + 3(3x + 2)D - 36)y = 3x^2 + 4x$

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5.a) Solve $(D^2 + a^2)y = \cot ax$,By the method of variation of parameters

b) Solve $(x^3D^3 + 3x^2D^2 + xD + 1)y = x + \log x$

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I B.Tech.I-SEM I-MID Exam (Descriptive) 2016-17

(Common to all Branches)

SET NO-IV

Sub: MATHEMATICS-I

Date:19/09/2016

Time: 90mins

Max.Marks: 30

PART - A

ANSWER ALL QUESTIONS.EACH QUESTION CARRY EQUAL MARKS

5 X 2 = 10M

1. A)Solve $(x^2 - ay)dx = (ax - y^2)dy$

B) Find the O.T's of given family of curves is $ay^2 = x^3$, where a is parameter

C) Solve $(D^4 - 2D^3 - 3D^2 + 4D + 4)y = 0$

D)Solve $(D^2 + 4)y = \sin 2x$

E) Solve $(x^2D^2 - 2xD - 4)y = x^4$

PART - B

2 x 10= 20M

ANSWER ALL QUESTIONS

2.A) The temp of a body drops from 100°C to 75°C in 10 min. When the air temp is 20°C. What will be its temp after half an hour? When will be the temp is 25°C

B) find the O.T 's of the given family of curves is

$r = 2a(\cos \theta + \sin \theta)$, where a is parameter

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3.a) solve $(D^3 + 2D^2 + D)y = e^{2x} + x^2 + x + \sin 2x$

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