**MATHEMATICS**

**PAGEMAKER10**

**INDEFINITE INTEGRAL**

Q1. is equal to

(a)

 -1/2

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q2. is equal to

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q3. is equal to

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q4. If then

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q5. is equal to

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q6. If then is equal to

(a) 1/3

(b) 2/3

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q7. If then is

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q8. is equal to

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q9. If then is equal to

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q10. If and , then is equal to

(a)

(b) 1

(c) 1+

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q11. is equal to

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q12. The value of the integral is

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q13. If

 then

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q14. If then

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q15. then

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q16. is equal to

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q17. If means log log log… the log being repeated times, then is equal to

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q18. If , then equals

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q19. If , then equals

(a)

(b)

(c)

(d) None of these

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q20. is equal to

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

**Solutions**

S1. Ans. (c)

Sol.

=

d

 in and = we get

 ln

S2. Ans. (d)

Sol.

d

S3. Ans. (c)

Sol.

S4. Ans. (d)

Sol.

Let

S5. Ans. (c)

Sol.

Let

S6. Ans. (a)

Sol.

Putting , we get

S7. Ans. (b)

Sol.

We have

Put

S8. Ans. (d)

Sol.

S9. Ans. (c)

Sol.

Write and put , so that

S10. Ans. (d)

Sol.

By rationalizing the integrand, the given integral can be written as

Putting we have so

and

S11. Ans. (b)

Sol.

=

=

S12. Ans. (a)

Sol.

Given that

or

Now put

=

S13. Ans. (c)

Sol.

Differentiating both sides, we get

Comparing the like powers of on both sides, we get

S14. Ans. (c)

Sol.

Differentiating both sides, we get

=

Comparing like terms on both sides, we get

S15. Ans. (a)

Sol.

Differentiating both sides, we get

Comparing the coefficient of like terms on both sides, we get

S16. Ans. (c)

Sol.

= where

=

S17. Ans. (a)

Sol.

Putting,

 and we get

S18. Ans. (b)

Sol.

Put so that

 =

S19. Ans. (b)

Sol.

Write

and put so that

S20. Ans. (d)

Sol.

Putting

 where

**LEVEL-II**

Q1. (where is equal

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

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Q2.

= then

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q3. is equal to

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q4. If then equals

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q5. If then is equal to

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q6. The value of integral is equal to

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q7. is equal to

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q8. The value of is equal to

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q9. If then

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q10. If then

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q11. If then equals

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q12. If then is equal to

(a) constant

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q13. If then is

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q14. 4 is equal to

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q15. If then equals

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q16. If then

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q17. If ,then equals

(a)

(b)

(c)

(d) None of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q18. is equal to

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q19. is equal to

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q20. If then equals

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

**Solutions**

S1. Ans. (b)

Sol.

let then ln

 =

 =

 =

S2. Ans. (a)

Sol.

 let

 =

 =

 =

 =

S3. Ans. (d)

Sol.

=

=

=

S4. Ans. (a)

Sol.

Now

S5. Ans. (a)

Sol.

Differentiating, we get

Integrating both sides w.r.t. x

S6. Ans. (a)

Sol.

=

Using we get

=

S7. Ans. (d)

Sol.

Let

If then

 =

 =

 =

 =

 =

S8. Ans. (c)

Sol.

Let

=

=

S9. Ans. (b)

Sol.

=

=

let

 =

 =

S10. Ans. (d)

Sol.

=

=

=

=

=

Hence, and

S11. Ans. (d)

Sol.

Let

 But

S12. Ans. (c)

Sol.

Integrating by parts, we have

But so

Therefore,

or

S13. Ans. (b)

Sol.

We have

Put

S14. Ans. (c)

Sol.

Putting we get

S15. Ans. (c)

Sol.

S16. Ans. (b)

Sol.

=

=

=

S17. Ans. (b)

Sol.

Put so that and

 =

 =

S18. Ans. (c)

Sol.

 =

 =

 =

S19. Ans. (d)

Sol.

 let

 =

 =

S20. Ans. (d)

Sol.

 =

 =

 =

**LEVEL-III**

Q1. If then equals

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

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Q2. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q3. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q4. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q5. is equal to

(a)

(b)

(c)

(d) None of these

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q6. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q7. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q8. is equal to

(a)

(b)

(c)

(d) None of the above

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q9. is equal to

(a) log

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q10. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q11. What is equal to?

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q12. If is constant of integration, then

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q13. is equal to

(a)

(b)

(c)

(d) None of these

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q14. is equal to

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q15. What is is equal to?

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q16. What is equal to?

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q17. is equal to

(a)

(b)

(c)

(d) None of these

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q18. What is is equal to?

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q19. I. is equal to

II. is

Which of the following is/are correct?

(a) Only II

(b) Both I and II

(c) Only I

(d) None of these

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q20. What is the value of

(a)

(b)

(c)

(d) None of these

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

**Solutions**

S1. Ans. (b)

Sol.

and put so that

S2. Ans. (c)

Sol.

 let

S3. Ans. (a)

Sol.

Let \

S4. Ans. (b)

Sol.

=

=

=

=

=

S5. Ans. (a)

Sol.

=

=

= where and

=

S6. Ans. (a)

Sol.

 =

 =

S7. Ans. (a)

Sol.

Let Multiply and D by we get

 =

 =

S8. Ans. (b)

Sol.

=

=

=

=

S9. Ans. (b)

Sol.

 function is differential coefficient of Hence, we put

 (

Also,

 =

S10. Ans. (b)

Sol.

Put

Put

 and

=

=

=

S11. Ans. (c)

Sol.

Hint Let

S12. Ans. (b)

Sol.

Breaking the given integral into partial fractions, we get

 =

S13. Ans. (a)

Sol.

Put

S14. Ans. (d)

Sol.

We have,

 =

Take,

=

=

S15. Ans. (b)

Sol.

=

=

=

S16. Ans. (b)

Sol.

Now, integrate by parts

S17. Ans. (b)

Sol.

We have,

Let,

Now,

=

=

S18. Ans. (d)

Sol.

Let

Put

 =

S19. Ans. (c)

Sol.

 where

 =

Thus, Statement I is true.

Put then

Thus, Statement II is false.

S20. Ans. (**a**)

Sol.

To be understood.