**Definite Integrals**

**MCQ-Single Correct**

1. The integral  is equal to

(1) -2 (2) 2

(3) 4 (4) -1 **[2017]**

2.  is equal to :

(1)  (2) 

(3) 3log3 -2 (4)  **[2016]**

3. The integral  is equal to :

(1) 4 (2) 1

(3) 6 (4) 2 **[2015]**

4. The integral  equals

(1)  (2) 

(3)  (4)  **[2014]**

5. If g(x) = then g(x + π) equals

(1) g(x) (2) g(x) . g(π)

(3)  (4) g(x) + g(π) **[2012]**

6. Let [.] denotes the greatest integer function, then the value of  is

(1) ¾ (2) 5/4

(3) 0 (4) 3/2 **[2011]**

7. Let p(x) be a function defined on R such that p’(x) = p’(1-x), for all x ε [0,1] , p(0) = 1 and p(1) = 41 . Then  equals

(1) 21 (2) 41

(3) 42 (4)  **[2010]**

8. , [\*] denotes the greatest integer function, is equal to

(1)  (2) 1

(3) -1 (4)  **[2009]**

9. Let I =  and J = . Then which one of the following is true?

(1) I > 2/3 and J > 2 (2) I < 2/3 and J < 2

(3) I < 2/3 and J > 2 (4) I > 2/3 and J < 2 **[2008]**

10. The value of the integral,  is

(1) ½ (2) 3/2

(3) 2 (4) 1 **[2006]**

11. is equal to **[2006]**

(1)  (2) 

(3)  (4) 

12.  is equal to

(1)  (2) 

(3)  (4)  **[2006]**

13. The value of  , a > 1, where [x] denotes the greatest integer not exceeding x is

(1) af(a) – {f(1) +f(2)+……+f([a])} (2) [a] f(a) – {f(1) +f(2) + ….. +f([a])}

(3) [a]f([a]) – {f(1) + f(2) + ….+f(a)} (4) af([a]) – {f(1) + f(2) + …..+f(a)}**[2006]**

14.  equals

(1)  (2) 

(3) tan1 (4)  **[2005]**

15. If , ,  and then

(1) I2 > I1 (2) I1 > I2

(3) I3 = I4 (4) I3 > I4 **[2005]**

16. Let f : be a differentiable function having f(2) = 6 , f’(2) = . Then  equals

(1) 24 (2) 36

(3) 12 (4) 18 **[2005]**

17. The value of  , a > 0 , is

(1) aπ (2) 

(3)  (4)  **[2005]**

18.  is

(1) e (2) e - 1

(3) 1-e (4) e + 1 **[2004]**

19. The value of  is

(1)  (2) 

(3)  (4)  **[2004]**

20. The value of  is

(1) 0 (2) 1

(3) 2 (4) 3 **[2004]**

21. If  , then A is

(1) 0 (2) π

(3) π/4 (4) 2π **[2004]**

22. If , I1 =  and I2 =  then the value of  is

(1) 2 (2) -3

(3) -1 (4) 1 **[2004]**

23. If f(y) = ey , g(y) = y ; y > 0 and F(t) = then

(1) F(t) = 1-e-t(1+t) (2) F(t) = et – (1+t)

(3) F(t) = tet (4) F(t) = te-t **[2003]**

24. If f(a + b –x) = f(x), then is equal to

(1)  (2) 

(3)  (4)  **[2003]**

25. The value of  is

(1) 3 (2) 2

(3) 1 (4) 0 **[2003]**

26. The value of the integral  is

(1)  (2) 

(3)  (4)  **[2003]**

27. Let . If  then one of the possible values of k, is

(1) 15 (2) 16

(3) 63 (4) 64 **[2003]**

28. Let f(x) be a function satisfying f’(x) = f(x) with f(0) = 1 and g(x) be a function that satisfies f(x) + g(x) = x2 . Then the value of the integral , is

(1)  (2) 

(3)  (4)   **[2003]**

29.  is

(1) 2 -  (2) 

(3)  (4)  **[2002]**

30. In = , then  equals (1) ½ (2) 1

(3) ∞ (4) 0 **[2002]**

31.  is

(1) 20 (2) 8

(3) 10 (4) 18 **[2002]**

32. If y = f(x) makes positive intercept of 2 and 0 unit in x and y axes and encloses an area of ¾ square units with the axes then  is

(1) 3/2 (2) 1

(3) 5/4 (4) -3/4 **[2002]**

33.  is

(1)  (2) π2

(3) 0 (4)  **[2002]**

**Assertion – Reason Type**

1. **Statement – I** : The value of the integral  is equal to . **[2013]**

**Statement – II :  .**