

BEST Phy., Chem., Maths TEAM FOR IITJEE, Down Load Free Study Package From Website [www.TekoClasses.com](http://www.TekoClasses.com)  
To know teaching style (demo) search "IIT MATHS BY SUHAG SIR" on [www.youtube.com](http://www.youtube.com)

GET SAME DAY SOLUTION OF JEE MAIN & JEE ADVANCED ON WEBSITE [www.TekoClasses.com](http://www.TekoClasses.com) EVERY YEAR

OUR STUDENT "PRATHAM NAIK" SCORED 115 OUT OF 120 (96%) IN MATHS & TOTAL MARKS 282 OUT OF 360 (79%) IN JEE MAIN 2013 & IN JEE ADVANCE 2013 HIS ALL INDIA RANK 258. 105 Selections in JEE Main 2014 & 22 Selections in JEE Advanced 2014

96 Selections in JEE Main 2015 & 21 Selections in JEE Advanced 2015 Also Available Online [www.MathsBySuhag.com](http://www.MathsBySuhag.com)

Result of JEE Main 2016 : Our Students Maths Marks 115/120 Siddharth Agrawal, 100/120 Himanshu Shukla, 100/120 Nikhil Jaiswal, 93/120 Swastik Sharma, 93/120 Shashwat Rangnekar & Our 112+ Students Selected for Advanced  
For Doubt Discussion on Maths : WhatsApp Number of Suhag Kariya : 9009 260 559 **PAGE 1**

**SOLUTIONS OF JEE ADVANCED 2016 PAPER 2 CODE 4 SAME DAY WITH IN 2 HOURS**

42  
42  
**(A)**

$$I = \int_{-\pi/2}^{\pi/2} \frac{x^2 \cos x dx}{1+e^x} \quad \text{--- (1)}$$

$$I = \int_{-\pi/2}^{\pi/2} \frac{(x)^2 \cos(x) dx}{1+e^{-x}} \rightarrow \int_{-\pi/2}^{\pi/2} \frac{x^2 \cos x e^x}{e^x+1} \quad \text{--- (2)}$$

adding (1) & (2)

$$2I = \int_{-\pi/2}^{\pi/2} \frac{x^2 \cos x (e^x+1)}{(e^x+1)} dx$$

$$2I = \int_{-\pi/2}^{\pi/2} x^2 \cos x \rightarrow 2I = 2 \int_0^{\pi/2} x^2 \cos x dx$$

$$I = \int_0^{\pi/2} x^2 \cos x dx$$

$$I = (\sin x x^2)_0^{\pi/2} - \int_0^{\pi/2} \sin x 2x dx$$

$$= \frac{\pi^2}{4} - \left[ (-\cos x (2x))_0^{\pi/2} - \int_0^{\pi/2} -\cos x (2) \right]$$

$$= \frac{\pi^2}{4} - 2 \text{ so option (A)}$$

Index	Que	Page	Que	Page	Que	Page
	37	7	43	11	49	4
	38	7	44	4	50	10
	39	6	45	9	51	3
	40	5	46	9	52	3
	41	10	47	8	53	2
	42	1	48	8	54	2