UNIVERSITY OF SARDODHA

DEPARTMENT OF MATHEMATICS

Conduct of Online Mid Term Exam Assignment through zoom. The due date of submission of Mid Term Exam Assignment is 20-04-2020

Subject: Special Function (MATH-434) **Teacher Name: Nida Ibrar**

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GROUP -1

Presentation/Viva on 26-04-2020(Sunday) through zoom at 11:00 am

Note: Given reason to support your answer and show your work not less than 15 pages.

Roll no	**Student Name**	**Assignment**
LC-020	Iqra Khalid	**Q 1**.Evaluate $\Gamma\left(-\frac{1}{2}\right)\Gamma\left(-\frac{7}{2}\right)$
LC-033	Memoona Hanif	**Q 2.** Express each of the following integral in terms of gamma and beta function and simplify when possible $\int_0^1 \left(\frac{1}{x}-1\right)^{1/4} dx$
LC-034	Sana Zafar	**Q 3.** Express each of the following integral in terms of gamma and beta function and simplify when possible $\int_a^b (b-x)^{m-1}(x-a)^{n-1}dx$
LC- 035	Fouzia Ishfaq	**Q 4.** Prove that $\int_0^{\pi/2} sin^n\theta\, d\theta = \int_0^{\pi/2} cos^n\theta\, d\theta = \frac{\pi}{2}\frac{\Gamma(1+n/2)}{\Gamma(\frac{2+n}{2})}$
LC-040	Sana Asghar	**Q5.** Show that $\Gamma\left(\frac{1}{2}+x\right)\Gamma\left(\frac{1}{2}-x\right) = \frac{\pi}{cos\pi x}$ plot your result over the range -10$\leq x \leq$ 10

GROUP -2 Presentation/Viva on 26-04-2020(Sunday) through zoom at 11:30 am **Note: Given reason to support your answer and show your work not less than 15 pages, help from mention resource paper**		
Roll no	**Student Name**	**Assignment**
LC-041	Javeria Waseem	**Q 1:** Drive the high order factorials can be expressed in terms of Pochhammer's symbol?
LC-050	Ayesha kiran	**Q 2:** Drive the Euler's gamma function with the help of pochhammer's symbol by the limiting process?
LC-026	Hiba Nazir	**Q 3:** Generalization the integral form of gamma function in term of Γ_k
LC- 014	Iqra Shoukat	**Q 4:** Drive the k-Pochhammer's symbol?
054	Maryum Ammara	**Q 5:** Proof all properties of theorem 3.2 from given source paper?

Source paper [https://www.rgnpublications.com/journals/index.php/jims/article/view/252]

GROUP -3 Presentation/Viva on 26-04-2020(Sunday) through zoom at 12:00 am **Note: Given reason to support your answer and show your work not less than 15 pages, help from mention resource paper**		
Roll no	**Student Name**	**Assignment**
03	Iqra Shahid	**Q:** Proof all properties of theorem 3.3 from given source paper
F16-01	Nofa Javed	**Q:** Proof the corollary# 3.4, 3.5 from given source paper?
F16-02	Sabiha Imtiaz	**Q:** Proof the corollary# 3.6 from given source paper?
F16-04	Saeeda Fatima	**Q:** Proof theorem 3.12 from given source paper?
F16-08	Iqra Maqsood	**Q**: Proof the corollary# 3.14 from given source paper?

Source paper [https://www.rgnpublications.com/journals/index.php/jims/article/view/252]

GROUP -4 Presentation/Viva on 03-05-2020(Sunday) through zoom at 11:00 am **Note: Given reason to support your answer and show your work not less than 15 pages, help from mention resource paper**		
Roll no	**Student Name**	**Assignment**
F 16- 09	Umaia Amen	**Q 1:** Drive the K-hypergeometric function?
F 16 -10	Rabia Khalid	**Q 2:** Drive the K-hypergeometric differential equation?
F 16- 11	Memoona Akhtar	**Q 3:** Drive the generalized the gamma and beta function? Eqs (18-19) from the given source paper.
F 16 -12	Farwa Arshad	**Q 4:** Drive the some properties of Gamma Beta Function (theorem 2.1) from the given source paper.
F 16-13	Rida	**Q 5:** Drive the some properties of Gamma Beta Function (theorem 2.3 from) the given source paper.

Source paper of Q (1 -2)

[https://www.researchgate.net/profile/Shahid_Mubeen2/publication/257599158_A_NOTE_ON_k-HYPERGEMETRIC_DIFFERENTIAL_EQUATIONS/links/0046352578f32dd663000000/A-NOTE-ON-k-HYPERGEMETRIC-DIFFERENTIAL-EQUATIONS.pdf]

Source paper of Q (3-5)

[https://lematematiche.dmi.unict.it/index.php/lematematiche/article/view/974/857]

GROUP -5 Presentation/Viva on 03-05-2020(Sunday) through zoom at 11:30 am **Note: Given reason to support your answer and show your work not less than 15 pages, help from mention resource paper**		
Roll no	**Student Name**	**Assignment**
F 16- 14	Mahroona Kashaf	**Q1:** Drive the some properties of Gamma Beta Function (theorem 2.4) from the given source paper.
F 16 -17	Adeeba Samar	**Q 2:** Drive the some properties of Gamma Beta Function (theorem 2.5) from the given source paper.
F 16- 21	Iqra Arshad	**Q3:** Integral representation of generalized gamma and beta function (theorem 2.6) from the given source paper.
F 16 -22	Zeenat Tariq	**Q 4:** Drive the integral Representation (Theorem 3.1) from the given source paper
F 16-23	Faria Nida Rasheed	**Q 5:** Drive the integral Representation (Theorem 3.10) from the given source paper

Source paper [https://lematematiche.dmi.unict.it/index.php/lematematiche/article/view/974/857

GROUP -6 Presentation/Viva on 03-05-2020(Sunday) through zoom at 12:00 pm **Note: Given reason to support your answer and show your work not less than 15 pages, help from mention resource paper**		
Roll no	**Student Name**	**Assignment**
F 16- 28	Ayesha Khalil	**Q 1:** Drive the theorem 3.14 from the given source paper
-04	Soha Javeed	**Q 2:** Drive the integral representation of gamma in K form the Given source paper?
37	Iqra Naeem	**Q 3:** Drive the relation between Pochhammer's k- system and k- gamma function?
09	Neelam Shazadi	**Q 4:** Solve Q 15 from chapter #2
136	Alishba Khalid	**Q 5:** Solve Q 9 from chapter #2
011	Rikza iftikhar	**Q 6:** Proof all properties of theorem 3.2 from given source paper?

Source paper Q 1

[https://lematematiche.dmi.unict.it/index.php/lematematiche/article/view/974/857**]**

Source paper Q(2-3)[

http://downloads.hindawi.com/journals/isrn.mathematical.analysis/2014/410801.pdf**]**