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Tiruchirappalli - 620 002

DEPARTMENT OF COMMERCE HONOURS

Cordially invites you for

INAUGURATION OF COMMERCE HONOURS ASSOCIATION AND THREE - DAY PLACEMENT TRAINING

Date: 23/08/2022 | Time: 10.00 AM | Venue: SAIL Auditorium

Presidential Address
Rev. Dr. M. Arockiasamy Xavier SJ
Principal

Felicitation
Rev. Dr. K. Amal SJ
Secretary

Dr. F. R. Alexander Pravin Durai
Head, Department of Commerce Honours

Resource Persons
Mr. Hadrine H Pereira
Head - Corporate Relations & Placement
International Skill Development Corporation, New Delhi

Ms. Archana Unnikrishnan
Asst. Manager - Corporate Relations & Placement
International Skill Development Corporation, Bengaluru

Organising Committee

Prof. J. Camilton
President, Association of Commerce Honours

Prof. G. Prabhakaran
Vice - President, Association of Commerce Honours

All are invited !

Dr. F.R.ALEXANDER PRAVIN DURAI,
M.Com., MBA., M.Phil., Ph.D.,
Head
Department of B.C.S.M. Honours
St. Joseph's College (Autonomous)

DEPARTMENT OF COMMERCE HONOURS

ST. JOSEPH'S COLLEGE (AUTONOMOUS), TRICHY – 02

A Report on THREE – DAY PLACEMENT TRAINING PROGRAMME

The Department of Commerce Honours in collaboration with International skills development corporation (ISDC) organised a three day placement training programme for the students of III B.COM Honours from 23rd August 2022 to 25th August 2022 in Commerce AV Hall. Mr. Hadrine H Pereira, Head, Corporate Relations & Placement, International Skill Development Corporation from Delhi and Ms.Archana Unnikrishnan, Asst. Manager, Corporate Relations & Placement, International Skill Development Corporation from Bangalore were the trainers for this programme. The programme was aimed to assist the students to make them job-ready and enhance the vitality of them getting fully equipped towards further career prospects and endeavours. The session aimed at making the students feel stress-free towards interviews, gain a better understanding of the corporate culture and manner. They were trained to feel confident and resilient towards any failure that could hinder their progress in the career ladder.

On the pretext of the programme, a briefing session was held by ISDC. They communicated the rules, guidelines, dress code and other programme related details to the students. The discipline masters, technical in-charges and activity in-charges were appointed.

DAY – 1

Immediately after the Inauguration of the Association, the III year students headed towards the Commerce AV Hall. The resource persons explained the entire schedule of the programme and imparted its importance. There were initial ice-breaking sessions.

On Day 1, the dress code for the students was formals. The students were asked to select their pairs and a peer-related introduction of each other took place. Followed by, Mr. Hadrine and Ms.Archana engaged the students with their sessions that focused

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Head
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St. Joseph's College (Autonomous)
Tiruchirappalli-620 002

DEPARTMENT OF COMMERCE HONOURS

ST. JOSEPH'S COLLEGE (AUTONOMOUS), TRICHY – 02

THREE – DAY PLACEMENT TRAINING PROGRAM

Dr. F.R.ALEXANDER PRAVIN DURAI,
M.Com.,MBA.,M.Phil.,Ph.D.,
Head
Department of B.COM Honours
St. Joseph's College (Autonomous)
Tiruchirappalli-620 002

St. JOSEPH'S COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI - 620 002

DEPARTMENT OF COMMERCE HONOURS
THREE - DAY PLACEMENT TRAINING PROGRAMME
VENUE: COMMERCE AV HALL
ATTENDANCE SHEET

S No.	D. No.	Name	Signature		
			DAY 1 (23.08.2022)	DAY 2 (24.08.2022)	DAY 3 (25.08.2022)
1	20UCR501	NITHYA SHRI D			
2	20UCR502	PAUL JUDE SHAJI			
3	20UCR503	NANDANA TV			
4	20UCR504	CATHERINE VIMALI G			
5	20UCR505	G J VENIITA JAS			
6	20UCR506	ARUL JENI T			
7	20UCR507	NIJANTHAN V			
8	20UCR508	VIMAL R			
9	20UCR509	MOHAMED ARIF S			
10	20UCR510	YOGESHVAREE N			
11	20UCR511	ASHWINKHAANT B			
12	20UCR512	NANDAKUMAR S			
13	20UCR513	ARSHAK ATHIL N.M			
14	20UCR514	MONISHA THANGAM M			
15	20UCR515	GIRI PRASANTH M R			
16	20UCR516	SIVASURYA.M			
17	20UCR517	JAYARAM GANDHI H			
18	20UCR518	V. CELVAA KUMARAN			
19	20UCR519	MANESH			
20	20UCR520	ALEX SAM PAUL M			
21	20UCR521	JECINO JUDES MINU C M			
22	20UCR522	NAGUL ISHANTH			
23	20UCR523	A VINNARASI			
24	20UCR524	AADHI. N			
25	20UCR525	A.HARIHARASUDHAN			
26	20UCR526	PON MONICKA	R. Pon Monicka	R. Pon Monicka	R. Pon Monicka
27	20UCR527	SAKTHI MUTHURAM			

	20UCR528	SIVAPERUMAL . P	P. Sivaperumal	P. Sivaperumal	P. Sivaperumal
29	20UCR529	SANDHIYA S M	Sandhiya SM	Sandhiya SM	Sandhiya SM
30	20UCR530	JAYASOORYAH S	S. Jayasooryah	S. Jayasooryah	S. Jayasooryah
31	20UCR531	PAVITHRA.V	V. Pavithra	V. Pavithra	V. Pavithra
32	20UCR532	ANJANI	V. Anjani	V. Anjani	V. Anjani
33	20UCR533	J . JEYA AISHWARYA	J. Jeya Aishwarya	J. Jeya Aishwarya	J. Jeya Aishwarya
34	20UCR534	NITHISBABU S			
35	20UCR535	GNANA JOSHUA A	23/08/22	24/08/22	25/08/22
36	20UCR536	BHARATH RAGHUL R	R. Bharath	R. Bharath	R. Bharath
37	20UCR537	LOKESH VARMA .B .J	B Lokesh	B Lokesh	B Lokesh
38	20UCR538	NIRMAL S			

Dr. F.R.ALEXANDER PRAVIN DURAI,
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mainly on 'Personality Development". A newspaper activity was assigned to the students to critically analyse the news and present the same.

DAY – 2

The dress code for this day was casuals. The session started with the newspaper activity. Followed by, Mr. Hadrine engaged the students on further aspects of career development and corporate culture through real-life examples, inspirational videos and anecdotes. The sessions focused on soft skills enhancement mainly focused on critical thinking and other essential interview skills.

After lunch, the sessions were much rigorous with a prime focus towards 'Resume Building' and the mock interview process for the next day.The students were critically observed based on their interest level and potential intellectual acumen. A stress cloud was purposefully installed so that the students will take the sessions seriously and rigorously prepare for their mock interview process.

The newspaper presentations were critically analysed by Mr. Hadrine.

DAY – 3

The dress code for this day was blazer, tie and formal attire. The session started with the Aptitude test ranging upto 45 minutes. After that, a talent show was conducted. The students expressed their talents through singing, drawing, painting, mimicry etc. After this, group discussion (GD) was conducted and mentored by Mr. Hadrine. Various groups were divided and the difficulty ranged from simple to complex based on the ability of the students.

After lunch, the mock interview sessions were conducted by ISDC resources persons and external panel lists from Industry. There were two panels and each student was interviewed for a minimum of 20 minutes.It was at this stage that the seeds sown during the programme were evidently found to be germinating and producing fruit.

After the mock interviews, a group photo was taken and after a sublime farewell, the students and the resource persons left.

After a week, participation certificates were issued to the students from ISDC.

Dr. F.R.ALEXANDER PRAVIN DURAI,
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Head
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Tiruchirappalli-620 002

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Request for ACCA - FR , FM & AA Classes

ISDC Tamil Nadu Academics <tamilnadu.academics@isdcglobal.org> Tue, Feb 28, 2023 at 2:31 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: "Mr. G.PRABAKARAN" <prabakaran_co2@mail.sjctni.edu>, "Ms. Mary Magdalene. A" <marymagdalene_cr2@mail.sjctni.edu>, Alexander Pravindurai <pravindurai@gmail.com>, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, Aaira Fathima <fathima.imraz@isdcglobal.org>, Academics Support <academics.support@isdcglobal.org.uk>, Darpan Jain <darpan.jain@isdcglobal.org.uk>

Dear Camilton Sir,

As discussed over the call, the remaining AA session for the 2020 batch will start on March 2nd, 2023. Please find attached the schedule for your reference.

If you require any further assistance, feel free to contact me.

Thanks & Regards,

Subathra S

Academics and Operations Support Associate

ISDC
International Skill Development Corporation
Skills for Tomorrow
www.isdcglobal.org

Global Head Quarters
The Old Court House
Hughenden Road
Buckinghamshire, HP13 5DT
United Kingdom, Tel : +44 20 376 33333

Regional Office: India
10/1, 4th Floor, Lakshmi Narayan Complex
Palace Road, Vasanth Nagar
Bengaluru - 560052, Karnataka
India, Tel : +91 80 4645 8899

tamilnadu.academics@isdcglobal.org | +91 8046458 899| +91 9606474860

On Mon, Feb 27, 2023 at 3:43 PM Mr. J.Camilton <camilton_co2@mail.sjctni.edu> wrote:
[Quoted text hidden]

SJC-AA-2020-Darpan Jain.xlsx
10K

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Request for ACCA - FR , FM & AA Classes

ISDC Tamil Nadu Academics <tamilnadu.academics@isdcglobal.org> Wed, Mar 8, 2023 at 6:47 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: "Mr. G.PRABAKARAN" <prabakaran_co2@mail.sjctni.edu>, "Ms. Mary Magdalene. A" <marymagdalene_cr2@mail.sjctni.edu>, Alexander Pravindurai <pravindurai@gmail.com>, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, Aaira Fathima <fathima.imraz@isdcglobal.org>, Academics Support <academics.support@isdcglobal.org.uk>

Dear Camilton Sir,

As discussed over the call, The FA session for the 2022 batch starts tomorrow (09/03/2023). Please find attached the schedule and faculty profile for your reference.

If you require any further assistance, feel free to contact me.

Thanks & Regards,

Subathra S

Academics and Operations Support Associate

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India, Tel : +91 80 4645 8899

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On Mon, Feb 27, 2023 at 3:43 PM Mr. J.Camilton <camilton_co2@mail.sjctni.edu> wrote:
[Quoted text hidden]

2 attachments

SJC-FA-2022-Nitish.xlsx
10K

nitin profile (2).pdf
54K

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Request for FM Revision classes and Special training on CBE based section C questions

Learning Support <info.academics@isdcglobal.org.uk> Fri, Jul 8, 2022 at 11:35 AM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: Aaira Fathima <fathima.imraz@isdcglobal.org>, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, "Dr. F.R.ALEXANDER PRAVIN DURAI" <alexanderpravindurai_co1@mail.sjctni.edu>, "Ms. Mary Magdalene. A" <marymagdalene_cr2@mail.sjctni.edu>, Academics Support <academics.support@isdcglobal.org.uk>, subathra.s@isdcglobal.org.uk

Dear Sir ,

As discussed , please find attached the schedule for FM revision and CBE platform training .

We can start the session from 1 st August as the faculty is busy till then . Our faculty Mr. Madesh K will be handling the session .

Please find attached his profile .

On Thu, Jul 7, 2022 at 9:41 AM Mr. J.Camilton <camilton_co2@mail.sjctni.edu> wrote:
[Quoted text hidden]

[Quoted text hidden]

2 attachments

SJT - FM - Madesh.xlsx
11K

maadesh - Profile.pdf
322K

Minutes Of Meeting

Campus To Corporate Mantra – Briefing Session

Meeting Schedule : 18th August 2022, from 03:00 PM to 03:30 PM

Attendees:

St.Joseph's College **:** Mr.Camilton J: Assistant Professor & Coordinator (Department of Commerce Honours)
: 35 Students

ISDC Global **:** Hadrine H Pereira: Senior Manager - Corporate Relations & Placement
: Archana Unnikrishnan: Assistant Manager - Corporate Relations & Placement

Topics Discussed

Guidelines for the session

- **Discipline**
  - Mobile phones on Flight Mode
  - Punctuality (Late commers are not entertained)
  - Attendance is Compulsory for all 3 days
- **Attire (Boys & Girls)**
  - Day 1: Business Formals
  - Day 2: Casual Wear
  - Day 3: Formal Dress for Interview (with blazer, tie, formal shoes)

Note: Anyone not following the above guidelines will be debarred from the session*

- **Student volunteers for: -**
  - Discipline In-charge: 2 Students (Yogeshwaere & Arif)
  - Technical Mentor: 2 Students (Aadhi & Giri)
  - Activity In-charge: 3 Students (Arul, Venita, Hari Hara Sudhan)

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Request for Offline FM and FR Classes - SJC Trichy

Subathra S <subathra.s@isdcglobal.org.uk> Fri, Sep 23, 2022 at 4:38 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: Aaira Fathima <fathima.imraz@isdcglobal.org>, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, "Dr. F.R.ALEXANDER PRAVIN DURAI" <alexanderpravindurai_co1@mail.sjctni.edu>, "Mr. G.PRABAKARAN" <prabakaran_co2@mail.sjctni.edu>, "Ms. Mary Magdalene. A" <marymagdalene_cr2@mail.sjctni.edu>, Aly Sayyad <hajarathaly.sayyad@isdcglobal.org.uk>, raavi.reddy@isdcglobal.org.uk, Academics Support <academics.support@isdcglobal.org.uk>, Learning Support <info.academics@isdcglobal.org.uk>

Dear Sir,

Greetings from ISDC!

As discussed via call, the classes will start on October 11th, 2022 for FR & FM, I'm sharing the Planned Schedule, Faculty Profile along with this mail. Kindly share with the students.

Please let me know if you have any questions regarding the same.
--

Thanks and Regards,
Subathra S
Associate - Academics & Operations Support

subathra.s@isdcgobal.org.uk | +919606474860

On Wed, Sep 14, 2022 at 12:43 PM Mr. J.Camilton <camilton_co2@mail.sjctni.edu> wrote:
[Quoted text hidden]

2 attachments

SJC-FR&FM-20&21-RAAVI.xlsx
10K

RAAVI VENKAT REDDY Profile.pdf
119K

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Inviting you for a Three Day Placement Training - SJC Trichy

Hadrine isdc <hadrine.pereira@isdcglobal.org.uk> Tue, Aug 16, 2022 at 6:15 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: hadrinehpereira@gmail.com, "Dr. F.R.ALEXANDER PRAVIN DURAI" <alexanderpravindurai_co1@mail.sjctni.edu>, "Ms. Mary Magdalene. A" <marymagdalene_cr2@mail.sjctni.edu>, "Mr. G.PRABAKARAN" <prabakaran_co2@mail.sjctni.edu>, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, Archana Unnikrishnan <archana.unnikrishnan@isdcglobal.org.uk>

Dear Mr. Camilton,

Many thanks for your kind invitation. I feel delighted to be there along with my colleague - Ms. Archana.
We shall plan to reach by 22 August evening to start the session by 23 August (Tuesday),

Request you to arrange two Guest houses within the campus for us (if possible) from 22 August to 26-August-2022.

Looking forward to meeting you and your blessed students.

Thanks & Regards

Hadrine H Pereira
Senior Manager - Corporate Relations & Placement

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International Skill Development Corporation Limited
20-22, Wenlock Road, London, N1 7GU
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Vasanth Nagar, Bengaluru - 560052, Karnataka, India

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International Convention Centre, Sydney, Australia
5-8 November 2018

hadrine.pereira@isdcglobal.org.uk | +91 80 4645 8888 | 89513 96400

[Quoted text hidden]

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Fwd: Request for Placement, Students Data - St. Joseph's College (Trichy)

Mr. J.Camilton <camilton_co2@mail.sjctni.edu> Tue, Nov 8, 2022 at 11:07 PM
To: Aravind ISDC <aravind.cr@isdcglobal.org.uk>
Cc: Archana Unnikrishnan <archana.unnikrishnan@isdcglobal.org.uk>, "Dr. F.R.ALEXANDER PRAVIN DURAI" <alexanderpravindurai_co1@mail.sjctni.edu>, Hadrine isdc <hadrine.pereira@isdcglobal.org.uk>, shone babu <shone.babu@isdcglobal.org>

Dear Mr.Aravind,

Please find the attached updated file.

Also,please find below the drive link to the resume of all 38 students.(It is a open link and can be accessed by anyone with the link),

https://drive.google.com/drive/folders/1D4likCyAca2iSdPBbxZLdrDna2Srk_AW?usp=share_link

Regards,
Mr.Camilton J,
Assistant Professor & Coordinator,
Department of Commerce Honours,
St.Joseph's College(Autonomous),Tiruchirappalli -02.
[Quoted text hidden]

St.Joseph's College (Trichy) - Students Data Format.xlsx
31K

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Fwd: Internship Offer letter From KRG

Hadrine isdc <hadrine.pereira@isdcglobal.org.uk> Tue, Dec 6, 2022 at 9:37 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: "Dr. F.R.ALEXANDER PRAVIN DURAI" <alexanderpravindurai_co1@mail.sjctni.edu>

---------- Forwarded message ---------
From: **Career KRG** <career@krgconsultants.com>
Date: Tue, 6 Dec 2022, 12:32 pm
Subject: Internship Offer letter From KRG
To: arshakathil1@gmail.com <arshakathil1@gmail.com>
Cc: hadrine.pereira@isdcglobal.org.uk <hadrine.pereira@isdcglobal.org.uk>

Dear Arshak Athil N.M.,

This is with reference to your application for an O**nline Internship Cum Live Project 2022**, we are happy to inform you that you have been selected as a **"Business Analyst Intern"** in our organization.

Your internship period will be for Two months starting from **15th Dec 2022**. During the course on this unpaid Internship program and thereafter, you need to agree to keep all the trade and the related information that the company holds strictly confidential.

Please note this letter is just an offer to the Internship and not an appointment. Appointment for services is subject to document verification. Please share a copy of your PAN Card/Aadhaar card and Any college id proof for our records

Kindly reply with the confirmation of your joining. The offer will be valid for next 48 hours.

We welcome you to the **"KRG Family"** and look forward to your long and fruitful association for mutual interests.

Vinay Kumar Mali
7877107287(WhatsApp/Call)

Team KRG
KRG STRATEGY CONSULTANTS PRIVATE LIMITED

E: career@krgconsultants.com
W: www.krgconsultants.com
P: Mumbai

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DISCLAIMER:

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

EF Support – Virtual Placement Drive (additional 9 Students)

ISDC Placements <placements@isdcglobal.org> Thu, Dec 1, 2022 at 10:55 AM
To: jenithanraj22@gmail.com, yogesri2823@gmail.com, ashwinkhaant@gmail.com, monishathangam2002@gmail.com, giriprasanthm@gmail.com, bmsainagul29@gmail.com, hariharasudhanar2003@gmail.com, Sooryahsiva@gmail.com, Nirmals7686@gmail.com
Cc: hadrine.pereira@isdcglobal.org.uk, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, archana.unnikrishnan@isdcglobal.org.uk, camilton_co2@mail.sjctni.edu

Dear Students,

Please be informed that EF Support has scheduled a virtual placement drive on the 1st of December 2022, details are below:-

Selection Process/ rounds
Round 1: Telephonic Interview (from 11:00 AM to 02:00 PM)

Round 2: Face-to-Face Interview at their office for Selected (the date will be shared later)

Note

- EF Support JD Attached
- Please be available on call from 11:00 AM to 02:00 PM on 1st December 2022

Office of Career Guidance & Placement

ISDC
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International Skill Development Corporation Limited
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United Kingdom

Regional Office: India
10/1,4th Floor, Lakshmi Narayan Complex, Palace Road
Vasanth Nagar, Bengaluru - 560052, Karnataka, India

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International Convention Centre, Sydney, Australia
5-8 November 2018

placements@isdcglobal.org | +918046458888 | +918046458899

2 attachments

EF Support - Student Application List 2 (1).xlsx
11K

EF Support - JD.pdf
418K

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Request for FM Revision classes and Special training on CBE based section C questions

Learning Support <info.academics@isdcglobal.org.uk> Thu, Jul 14, 2022 at 4:29 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: Aaira Fathima <fathima.imraz@isdcglobal.org>, Aravind ISDC <aravind.cr@isdcglobal.org.uk>, "Dr. F.R.ALEXANDER PRAVIN DURAI" <alexanderpravindurai_co1@mail.sjctni.edu>, "Ms. Mary Magdalene. A" <marymagdalene_cr2@mail.sjctni.edu>, Subathra S <subathra.s@isdcglobal.org.uk>, Ambica Alturi <alturi.ambica@isdcglobal.org.uk>, Academics Support <academics.support@isdcglobal.org.uk>, Chinmay Shah <Chinmay.shah@isdcglobal.org.uk>

Dear Sir ,

As discussed, we can have the session between 25-29 th July (online) Please find attached the schedule .

I have attached faculty profile for your reference .

[Quoted text hidden]

2 attachments

Faculty Profile Chinmay Shah.pdf
506K

SJT - FMrevision - Chinmay.xlsx
11K

WEBMAIL

Mr. J.Camilton <camilton_co2@mail.sjctni.edu>

Inviting you for a Three Day Placement Training - SJC Trichy

Archana Unnikrishnan <archana.unnikrishnan@isdcglobal.org.uk> Wed, Aug 31, 2022 at 5:45 PM
To: "Mr. J.Camilton" <camilton_co2@mail.sjctni.edu>
Cc: alexanderpravindurai_co1@mail.sjctni.edu, marymagdalene_cr2@mail.sjctni.edu, Shone Babu <shone.babu@isdcglobal.org>, Hadrine isdc <hadrine.pereira@isdcglobal.org.uk>, aravind.cr@isdcglobal.org.uk

Dear Camilton,

We appreciate your collaborative effort and thank you for your support in making the "Campus to Corporate Mantra" - A Three-Day Placement Workshop from August 23rd to August 25th, 2022 a successful event with 100% attendance.

Special thanks to Dr. F.R.Alexander Pravin Durai and Ms. Mary Magdalene A.

We are incredibly proud of your student's enthusiasm during the 3-Day Placement Workshop and are pleased to present them with a certificate of participation for this session. (Certificate link shared below)

Certificate of Participation: https://drive.google.com/drive/folders/1QCIEjUEgZfAB6uDUAVIwh_WZ_XHFkeoq

We look forward to conducting more such sessions.

Thank You & Regards,

Archana Unnikrishnan

Assistant Manager - Corporate Relations & Placements

ISDC
International Skill Development Corporation
Skills for Tomorrow
www.isdcglobal.org

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International Skill Development Corporation Limited
20-22, Wenlock Road, London, N1 7GU
United Kingdom

Regional Office: India
10/1,4th Floor, Lakshmi Narayan Complex, Palace Road
Vasanth Nagar, Bengaluru - 560052, Karnataka, India

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International Convention Centre, Sydney, Australia
5-8 November 2018

archana.unnikrishnan@isdcglobal.org.uk | +919036008963

[Quoted text hidden]

St. Joseph's College (Autonomous)

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Tiruchirappalli – 620002

Department Of Business Administration

A training program on stock investment avenues

A training program on "stock investment avenues" organized by the department of Business Administration for the II-year students of BBA with a purpose of impairing practical knowledge on get the practical knowledge on stock investment options. The resource person for the event was Naga Arjunan Dealer, Anandrathi investment services, Trichy

The event has started at 2.00 PM with a devotional song followed by the welcome address given by Mr. Kalvin of II BBA

Our resource person Mr. Naga Arjunan K gave an insight about the need for investment rather than savings, where to invest, the world of stock market, IPO, how shareholder get out the deal, what is mutual fund and How does it work.

As business students, the program gave them a practical idea about the investment avenues namely fixed income, commodities, equity, real-estate etc.

The following feedbacks were received from the students:

- Got practical knowledge on stock investment
- Very interactive session
- We got some valuable information on mutual funds

- We have planned to invest on equities very soon

.

“We are very thankful to our department for organizing such an informative workshop for us. It is really helpful for us to develop our practical knowledge on stock investment”. The meeting has came to end at 4.30 pm with the vote of thanks proposed by Mr. Riyas of II BBA followed by national anthem.

Photographs

Inaugural prayer

Welcoming the gathering

Resource person talk

Interaction

Students listening to the session

ATTENDANCE II BBA- A

S. No	D. No	Signature
1.	21UBU501	[illegible]
2.	21UBU502	
3.	21UBU503	[illegible]
4.	21UBU504	Tamil. M
5.	21UBU505	Ponn. MS
6.	21UBU506	[illegible]
7.	21UBU507	[illegible]
8.	21UBU508	[illegible]
9.	21UBU509	[illegible]
10.	21UBU510	[illegible]
11.	21UBU511	[illegible]
12.	21UBU512	[illegible]
13.	21UBU513	[illegible]
14.	21UBU514	[illegible]
15.	21UBU515	[illegible]
16.	21UBU516	[illegible]
17.	21UBU517	[illegible]
18.	21UBU518	[illegible]
19.	21UBU519	Abilash.j
20.	21UBU521	[illegible]
21.	21UBU522	[illegible]
22.	21UBU523	[illegible]
23.	21UBU524	[illegible]
24.	21UBU525	
25.	21UBU526	[illegible]
26.	21UBU527	Deepan
27.	21UBU528	Sathish
28.	21UBU529	
29.	21UBU530	Antophino
30.	21UBU531	Nicolus
31.	21UBU532	

32.	21UBU533	M. Abishek
33.	21UBU534	[illegible]
34.	21UBU535	[illegible]
35.	21UBU536	
36.	21UBU537	[illegible]
37.	21UBU538	[illegible]
38.	21UBU539	Aloysius
39.	21UBU540	[illegible]
40.	21UBU541	
41.	21UBU542	[illegible]
42.	21UBU543	
43.	21UBU544	R. Ruban Felix
44.	21UBU545	[illegible]
45.	21UBU546	R. Yogesh
46.	21UBU547	M. Sakthi V.
47.	21UBU548	[illegible]
48.	21UBU549	R. Ranjith
49.	21UBU550	P. Livingston Joshua
50.	21UBU551	L. Harish
51.	21UBU552	[illegible]
52.	21UBU553	R. Saravanan
53.	21UBU554	
54.	21UBU555	[illegible]
55.	21UBU557	T. Anantharaj
56.	21UBU558	[illegible]
57.	21UBU559	[illegible]
58.	21UBU560	[illegible]
59.	21UBU561	[illegible]
60.	21UBU564	[illegible]
61.	21UBU565	Vijay
62.	21UBU566	Christoben
63.	21UBU567	
64.	21UBU568	[illegible]
65.	21UBU569	
66.	21UBU570	Mani K.
67.	21UBU571	
68.	21UBU572	[illegible]

II BBA "B"

S.no	D.no	Signature
1.	21UBU601	
2.	21UBU602	
3.	21UBU603	
4.	21UBU604	
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17.	21UBU616	
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19.	21UBU618	
20.	21UBU619	
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54.	21UBU663	
55.	21UBU664	
56.	21UBU665	
57.	21UBU666	
58.	21UBU667	
59.	21UBU668	
60.	21UBU669	
61.	21UBU670	
62.	21UBU671	
63.	21UBU672	

DEPARTMENT OF BUSINESS ADMINISTRATION

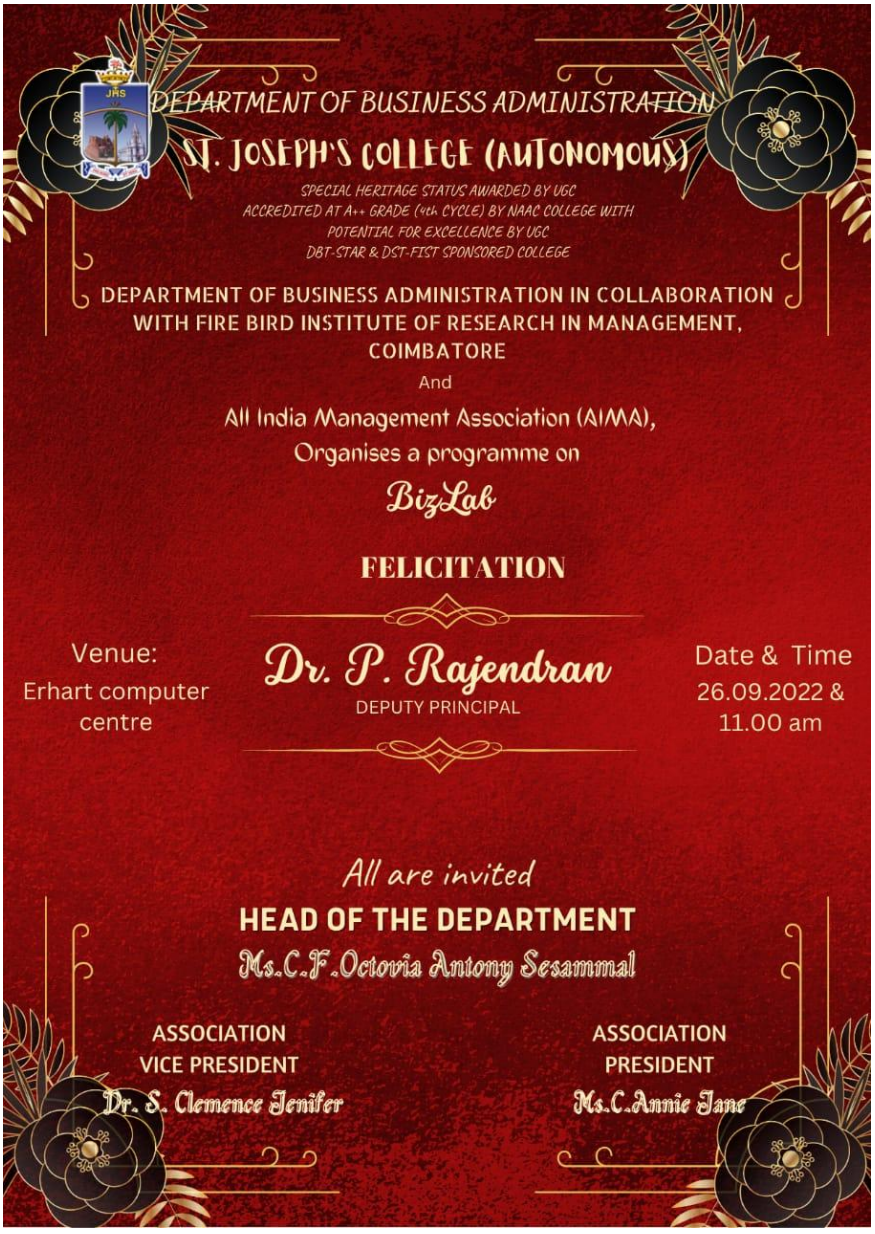
ST.JOSEPH'S COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI

REPORT ON THE ONE DAY WORKSHOP ON BIZLAB

Date: 26.09.2022

Time: 11.00 AM – 4.30 PM

Venue : ERHART Computer Center, St. Joseph's College, Trichy



The Department of business Administration in Association with Firebird Institute of Research in Management, Coimbatore and All Indian Management Association (AIMA) organize a one day workshop on BIZLAB on 26thsep 2022. The program was felicitated by **Dr. P. Rajendran**, Deputy Principal,St. Joseph's College (Autonomous) Trichy.

Prof. Rajesh from Firebird Institute of Management, Coimbatore, Tamil Nadu, gave an orientation about AIMA & BIZLAB, highlighted that BIZLAB is a first of its kind virtual lab for management students. Just like the laboratories for other science subject, using BIZLAB software, students may "experiment" with various management strategies and tactics on the given scenario. Specifically designed, keeping in mind the learning habit of the new generation students He mentioned that, BIZLAB provides an unparalleled learning experience. He also instructed about the stages in the simulation like Product Design, Marketing Mix, Operation, Manpower, Finance, Special Projects, Proforma and Simulation. Our students were made to participate in a model simulation conducted by them. Five teams were selected to take part in the final round which is going to be held at Firebird Institute of Management, Coimbatore, Tamil Nadu in coming month.

The second session started after the break at 2:30 PM. **Prof. Dr. Immanuel** from Firebird Institute of Management, Coimbatore, Tamil Nadu gave an orientation about the Firebird institute of management, Coimbatore, Tamil Nadu. He highlighted the 5 principles of successful leaders namely Disruptive Thinking, Applied Knowledge, Personal Discipline & Accountability, Empathy and winning Attitude.

The session came to the end with the valediction address given by the head of the department.

Prof. C. F. OCTOVIA ANTONY SESSAMMAL, MBA.,M.Phil.,NET.
Head & Assistant Professor
Department of Business Administration
St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002.

DEPARTMENT OF BUSINESS ADMINISTRATION

ST.JOSEPH'S COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI

REPORT ON THE ONE DAY WORKSHOP ON "FIREBIRD INSTITUTE OF MANAGEMENT & AIMA Organizes a program on BIZLAB "

Head of the Department honoring the dignitaries

Students attending the session

Resource Person's addressing the students

Group Photo with student secretaries, faculties of the department and the resource person

M

DEPARTMENT OF BBA
St. Joseph's College, Trichy

Date: *26.09.2022*
Programme:
Venue: Erhart Computer Center

ATTENDANCE

III – BBA 'A'

S. No	D. No	signature
1	20UBU501	M. Selvaya Sanjai.
2	20UBU502	T.R. Joe Richard
3	20UBU503	
4	20UBU504	
5	20UBU505	T. Ravikiran
6	20UBU506	
7	20UBU507	
8	20UBU508	
9	20UBU509	
10	20UBU510	
11	20UBU511	
12	20UBU512	
13	20UBU513	
14	20UBU515	
15	20UBU516	
16	20UBU517	
17	20UBU518	
18	20UBU520	
19	20UBU521	S. Robinson.
20	20UBU522	
21	20UBU523	
22	20UBU524	
23	20UBU525	
24	20UBU526	P. Fabian Patrick
25	20UBU527	
26	20UBU528	
27	20UBU529	
28	20UBU530	J. Melwyn Bloomer

29	20UBU531	
30	20UBU532	
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38	20UBU540	
39	20UBU541	
40	20UBU542	
41	20UBU544	
42	20UBU545	
43	20UBU546	
44	20UBU547	
45	20UBU549	
46	20UBU550	
47	20UBU551	
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49	20UBU553	
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61	20UBU567	
62	20UBU568	
63	20UBU569	

M

DEPARTMENT OF BBA
ST. JOSEPH'S COLLEGE, TRICHY

Date: *26.09.2022*
Programme:
Venue: Erhart Computer Center

ATTENDANCE

III BBA-B

S. No	D. No	signature
1	20UBU601	
2	20UBU602	V. Vijay
3	20UBU604	V.
4	20UBU605	
5	20UBU606	A. Felix geo
6	20UBU607	
7	20UBU608	
8	20UBU609	
9	20UBU610	
10	20UBU611	
11	20UBU612	
12	20UBU614	V.
13	20UBU615	
14	20UBU616	R. Vimal Prakash
15	20UBU617	N.
16	20UBU618	
17	20UBU619	A. Prakash
18	20UBU622	
19	20UBU623	
20	20UBU624	D. Engine Aaruthra Raj
21	20UBU625	J. Ruban raj.
22	20UBU626	J.
23	20UBU627	
24	20UBU628	
25	20UBU629	
26	20UBU631	S. Srinivasan
27	20UBU633	
28	20UBU634	S.
29	20UBU636	S. M.
30	20UBU638	
31	20UBU639	
32	20UBU641	R.
33	20UBU642	

34	20UBU643	[illegible]
35	20UBU645	J. Dheran..
36	20UBU647	[illegible]
37	20UBU648	[illegible]
38	20UBU649	[illegible]
39	20UBU650	S. [illegible]
40	20UBU652	S. [illegible]
41	20UBU653	V. [illegible]
42	20UBU654	[illegible]
43	20UBU655	S. [illegible]
44	20UBU657	[illegible]
45	20UBU658	S. SomaBabu.
46	20UBU659	S. Darwin
47	20UBU660	J. TenlRichard
48	20UBU661	[illegible]
49	20UBU662	V. manoj kumar
50	20UBU664	[illegible]
51	20UBU665	[illegible]
52	20UBU666	B. Danish
53	20UBU667	[illegible]
54	20UBU668	E. [illegible]
55	20UBU669	S. [illegible]
56	20UBU672	B. [illegible]
57	20UBU673	S. [illegible]
58	20UBU674	S. [illegible]
59	20UBU675	[illegible]
60	20UBU676	[illegible]

A

DEPARTMENT OF BBA
ST. JOSEPH'S COLLEGE, TRICHY

Date: *26.09.2022*
Programme:
Venue: Erhart Computer Center

ATTENDANCE

III – BBA 'A'

S. No	D. No	signature
1	20UBU501	
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26	20UBU528	
27	20UBU529	
28	20UBU530	

29	20UBU531	Hariesharan.Pa
30	20UBU532	S. Joe [illegible]
31	20UBU533	[illegible]
32	20UBU534	S. Anto Johil
33	20UBU535	S. Navan
34	20UBU536	B. Binayagam
35	20UBU537	A. [illegible]
36	20UBU538	Clement Raj
37	20UBU539	R. Sivaraman
38	20UBU540	[illegible]
39	20UBU541	R. Dinprakash
40	20UBU542	Jhoen [illegible]
41	20UBU544	A. Andrew Immanuel
42	20UBU545	J. Martin ebinezer
43	20UBU546	[illegible]
44	20UBU547	S. Mugesh
45	20UBU549	A. Doth Roth
46	20UBU550	[illegible]
47	20UBU551	A. Baranidharan
48	20UBU552	S. Logeshwar
49	20UBU553	
50	20UBU554	R. Arun Kumar
51	20UBU555	Rubsan Rosshan
52	20UBU556	
53	20UBU557	N. [illegible]
54	20UBU558	[illegible]
55	20UBU560	D. [illegible]
55	20UBU561	M. [illegible]
57	20UBU562	S. Edward Zeno
58	20UBU563	M. [illegible]
59	20UBU564	K. Kailash
60	20UBU565	P. Sam
61	20UBU567	D. Joshva.
62	20UBU568	[illegible]
63	20UBU569	S. Hari Vignesh

DEPARTMENT OF BBA
St. Joseph's College, Trichy

Date: 26.09.2022
Programme:
Venue: Erhart Computer Center

ATTENDANCE

III BBA-B

S. No	D. No	signature
1	20UBU601	
2	20UBU602	
3	20UBU604	
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15	20UBU617	
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17	20UBU619	
18	20UBU622	
19	20UBU623	
20	20UBU624	
21	20UBU625	
22	20UBU626	
23	20UBU627	
24	20UBU628	
25	20UBU629	
26	20UBU631	S. Srinivasan.
27	20UBU633	
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50	20UBU664	
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52	20UBU666	
53	20UBU667	
54	20UBU668	
55	20UBU669	
56	20UBU672	
57	20UBU673	
58	20UBU674	
59	20UBU675	
60	20UBU676	

St. JOSEPH'S COLLEGE (Autonomous)

Accredited at A++ Grade (Cycle IV) by NAAC | Special heritage status awarded by UGC
College with potential for Excellence by UGC | DBT-STAR & DST-FIST Sponsored College
TIRUCHIRAPPALLI - 620 002, TAMIL NADU, INDIA.
0431 - 4226379 | 94431 92352
ravindran.da@gmail.com, ravindran_cs1@mail.sjctni.edu

Dr. D. Ravindran
Vice Principal

21st, January 2023

To

Mr. Naveen,
Senior Manager- Branch
India Post Payments Bank,
Tiruchirappalli-Branch (0502)

Respected Sir,

Subject: List of students for Internship

I recommend the following students of the Department of Business Administration of our Institution for the Internship programme offered by your Department. Herewith, I enclose the list of students. Kindly acknowledge the same and send us the confirmation letter of Internship.

Thanking you,

Yours sincerely,

Dr. D. RAVINDRAN
Vice Principal (Academic)
Associate Professor in Computer Science
St. Joseph's College (Autonomous)
Tiruchirappalli-620 002.

Encl:

1. Students' Name List
2. Copy of Students' Id_Cards
3. Copy of Students' Aadhaar cards

Gmail

kewin genuwin <kewin.genuwin@gmail.com>

Subject- Invitation for Internship in "India Post Payments Bank" - Tiruchirappalli Branch

naveen.r@ippbonline.in <naveen.r@ippbonline.in> Fri, Jan 13, 2023 at 4:34 PM
To: kewin.genuwin@gmail.com
Cc: IPPB TIRUCHIRAPPALLI <ippb0502@ippbonline.in>

Respected Sir/Ma'am,

India Post Payments Bank (IPPB) was setup by **Department of Post** under **Ministry of Communication** with 100% government equity & is running its business operations across the country through 650 dedicated branches & 1.40 lakh access points with strength of 1.60 lakh GDS/Postmen/Postal Assistants to serve its customers a wide variety of products and services. IPPB branches are situated mostly at Head Office locations of DOP and all other access points of the district are tagged to that IPPB branches.

To take forward the GOI's vision of complete "**Financial Inclusion**", "**Digital India**" and reach out to the remotest and rural part of country, we are continuously focusing on increasing our bouquet of products and services and aimed to extend our services till last mile across the country through our wise distribution network & unique feature of "**DOORSTEP BANKING"** & "Citizen Centric Services".

In a journey to complete financial inclusion & to educate the youth to the general banking & payments banking services and extending the knowledge of various banking terminologies/fintech, we are happy to offer internship to the students who are pursuing their career in banking / commerce / finance / fintech fields and keen to get knowledge of modern banking domain so that they can utilize this experience in near future not only limited to career building but also enhance their skill sets.

We request you to recommend the students (excluding distance learning programme students) of your esteemed institution to direct their applications to our branch.

Details of Internship Programme:

All students (excluding distance learning programme) from reputed ...ties/Deemed Universities/Institutions recognised by University Grant ...mission (UGC) and /or approved by All India Council for Technical Education (AICTE) shall be eligible to apply for undertaking internship at IPPB.

Stipend: The students will not be paid any stipend/financial benefits. Students will have to make their own arrangements for boarding/lodging, transportation, stationery etc.

Procedure for Application: Interested applicants may apply for internship in IPPB at least 7 working days in advance to concerned Branch

Period of Internship: The period of internship shall not exceed 3 months.

Requirements

- A common letter from the college shall be provided recommending the identified students to join Internship Programme of IPPB.
- Copy of College ID Card of applicants to be submitted.
- Copy of Aadhaar Card of applicants to be submitted

We look forward to receive a confirmation from your end to enroll students of your esteemed institution as Interns of India Post Payments Bank.

Thanks & Regards

Naveen. R

Senior Manager – Branch

India Post Payments Bank

Tiruchirappalli Branch (0502)

9944667493 / 8220111883

0431-2461222

Octovia Anty Sesamal

Prof. C. F. OCTOVIA ANTONY SESSAMMAL, MBA, M.Phil.,(Ph.D.)
Head & Assistant Professor
Department of Business Administration
St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002.

India Post Payments Bank

Naveen. R
Senior Manager

Mobile: +91 9944667493
Email: naveen.r@ippbonline.in
Website: www.ippbonline.com

India Post Payments Bank Limited,
Tiruchirappalli Branch
Tiruchirappalli Head Post Office
Bharathiyar Salai, Tiruchirappalli - 620001

Octovia Antony Sessammal

Prof. C. F. OCTOVIA ANTONY SESSAMMAL, MBA.,M.Phil.,NET.
Head & Assistant Professor
Department of Business Administration
St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002.

To

21/01/23

Mr. Naveen,

Senior Manager- Branch

India Post Payments Bank,

Tiruchirappalli-Branch (0502)

Respected Sir,

Subject: List of students for Internship

We recommend the following students of our Esteemed Institution to Join the Internship programme offered by your department. Herewith enclosed the list of students .Kindly acknowledge the same and send us the confirmation letter of Internship.

Thanking you,

Yours,

21/01/2023

Encl:

Studnets Name List

Copy of Students Id Card

Copy of Students Aadhaar card

Prof. C. F. OCTOVIA ANTONY SESSAMMAL, MBA.,M.Phil.,NET.
Head & Assistant Professor
Department of Business Administration
St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002.

Students List

Sl.No.	Department No.	Name
1.	21UBU517	V.Richard
2.	21UBU530	M.AnttoPhino
3.	21UBU534	V.Dickans
4	21UBU561	A.GokulNath
5	21UBU564	S.Felix Sony
6	21UBU566	I.ChristopherRaj
7	21UBU604	R.S.Indrajith
8	21UBU618	M.Jainudeen
9	21UCO580	R.Santhosh
10	21UBU643	S.Joan Pisher

OctoviaAnty Sessanmal

Prof. C.F OCTOVIA ANTONY SESSANMAL, MBA.,M.Phil.,
Head & Assistant Professor
Department of Business Administration
St. Joseph's College (Autonomous)
Tiruchirappalli - 620 002.

Pondicherry University (Central University)

&

The Society of St. Joseph's College

Tiruchirappalli - 620 002

PU-SJC MBA Twinning Programme

Dr. M. Antony Jesuraja,
M.Com., M.Phil., Ph.D.
Coordinator

Rev. Fr. Berchmans, SJ,
M.Com., M.Phil., NET, SET.
Asst. Coordinator

Date: 28th March 2023

Certificate of Appreciation

This is to inform that **Dr.Dennis Edward Fernando**, Assistant Professor of Commerce Department, St. Joseph's College (Autonomous), Tiruchirappalli was a guest faculty (Resource Person) of Pondicherry University St. Joseph's College MBA Twinning Programme for the year 2022-2023.

We thank and appreciate **Dr. Dennis Edward Fernando,** for his enriching and informative lectures on **Business Environment and Law.**

Dr.M.Antony Jesuraja
Coordinator
MBA Twinning Programme
St.Joseph's College (Autonomous)
Trichy-2

College Seal

Pondicherry University (Central University)

&

The Society of St. Joseph's College

Tiruchirappalli - 620 002

PU-SJC MBA Twinning Programme

Dr. M. Antony Jesuraja,
M.Com., M.Phil., Ph.D.
Coordinator

Rev. Fr. Berchmans, SJ,
M.Com., M.Phil., NET, SET.
Asst. Coordinator

Date: 28th March 2023

Certificate of Appreciation

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We thank and appreciate **Dr. Dennis Edward Fernando,** for his enriching and informative lectures on **Retail Marketing.**

Dr.M.Antony Jesuraja
Coordinator
MBA Twinning Programme
St.Joseph's College (Autonomous)
Trichy

College Seal

Pondicherry University (Central University)

&

The Society of St. Joseph's College

Tiruchirappalli - 620 002

PU-SJC MBA Twinning Programme

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M.Com., M.Phil., NET, SET.
Asst. Coordinator

Date: 28th March 2023

Certificate of Appreciation

This is to inform that **Dr.Dennis Edward Fernando**, Assistant Professor of Commerce Department, St. Joseph's College (Autonomous), Tiruchirappalli was a guest faculty (Resource Person) of Pondicherry University St. Joseph's College MBA Twinning Programme for the year 2022-2023.

We thank and appreciate **Dr. Dennis Edward Fernando,** for his enriching and informative lectures on **Marketing Management.**

Dr.M.Antony Jesuraja
Coordinator
MBA Twinning Programme
St.Joseph's College (Autonomous)
Trichy

College Seal

DEF_Collab_22-23

PG & Research Department of English
St. Joseph's College (Autonomous)
Tiruchirappalli, Tamil Nadu, India

CERTIFICATE OF APPRECIATION

awarded to

Dr Dennis Edward Fernando

Assistant Professor

Department of Commerce (Shift I)

for handling 20 hours in the Bridge Course

for the first-year undergraduate students of Shift I

from August to October 2022.

Dr. V. L. Jayapaul
Head of the Department &
Coordinator, Bridge Course

Rev. Dr. S. Paul Pragash SJ
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Rev. Dr. M. Arockiasamy Xavier SJ
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Dr. G. John
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Rev. Dr. Arockiasamy Xavier SJ
Principal & Director

Certificate of Appreciation

This is to acknowledge the services rendered as a Resource Person by Dr. G. John, Associate Professor in Commerce, St. Joseph's College, Trichy-2, for the Certificate Course in Tally Essentials during the year 2022-2023.

St. Joseph's Institute of Tally Education (JITE) appreciates his expertise and contribution in imparting computerized accounting skills to the student community.

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This is to acknowledge the services rendered as a Resource Person by Dr.M.Julias Ceasar, Assistant Professor in Commerce, St. Joseph's College, Trichy-2, for the Certificate Course in Tally Essentials during the year 2022-2023.

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This is to acknowledge the services rendered as a Resource Person by Dr.P.Bastin Arockiaraj, Assistant Professor in Commerce, St. Joseph's College, Trichy-2, for the Certificate Course in Tally Essentials during the year 2022-2023.

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Fixed Point Theory and Algorithms for Sciences and Engineering

RESEARCH Open Access

Solving an integral equation via $\mathscr{C}^\star$-algebra-valued partial b-metrics

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Abstract

In this paper, we prove some common coupled fixed-point theorems on complete $\mathscr{C}^\star$-algebra-valued partial b-metric spaces. Some of the well-known facts in the literature are generalized and expanded by the results shown. An example to illustrate our findings is presented. We also explore some of the applications of our key results.

Keywords: Coupled coincidence point; Coupled fixed point; $\mathscr{C}^\star$-algebra-valued partial b-metric space; w-compatible

1 Introduction

Fixed point theory, one of the active research areas in mathematics, focuses on maps and abstract spaces, see [1–9], and the references therein. The notion of coupled fixed points was introduced by Guo and Lakshmikantham [10]. In 2006, Bhaskar and Lakshmikantham [4] introduced the concept of a mixed monotonicity property for the first time and investigated some coupled fixed point theorems for such mappings. As a result, many authors obtained many coupled fixed point and coupled coincidence point theorems, see [11–23] and the references therein. In 2014, Ma et al. [24] initially introduced the concept of $\mathscr{C}^\star$-algebra-valued metric spaces, and proved some fixed point theorems for self-maps with contractive or expansive conditions on such spaces. In 2019, Chandok et al. [25] proved some fixed point theorems on C^*-algebra-valued partial metric spaces. In 2021, Mlaiki et al. [26] proved some fixed point theorems on C^*-algebra-valued partial b-metric spaces. In this paper, we prove some coupled fixed point theorems on C^*-algebra-valued partial b-metric spaces.

2 Preliminaries

First of all, we recall some basic definitions, notations, and results of $\mathscr{C}^\star$-algebra that can be found in [27]. Let $\mathscr{H}$ be a unital algebra. An involution on $\mathscr{H}$ is a conjugate-linear map $r \to r^\star$ on $\mathscr{H}$ such that $r^{\star\star} = r$ and $(rs)^\star = s^\star r^\star$ for any $r, s \in \mathscr{H}$. The pair $(\mathscr{H}, \star)$ is called a $\star$-algebra. A $\star$-algebra $\mathscr{H}$ together with a complete submultiplicative norm such that $\|r^\star\| = \|r\|$, is said to be a Banach $\star$-algebra. Furthermore, a $\mathscr{C}^\star$-algebra is a Banach $\star$-algebra with $\|r^\star r\| = \|r\|^2$, for all $r \in \mathscr{H}$. An element r in $\mathscr{H}$ is self-adjoint, or hermitian, if $r = r^*$. Let $\mathscr{H}_{sa}$ be the set of all self-adjoint elements in $\mathscr{H}$, and define the spectrum of $r \in \mathscr{H}$ to be the set $\sigma(r) = \{\lambda \in C : \lambda I - r \text{ is not invertible}\}$. An element r of a $\mathscr{C}^\star$-algebra

$\mathscr{H}^\star$ is positive if r is hermitian and $\sigma(r) \subseteq [0, +\infty)$, where $\sigma(r)$ is the spectrum of r. We write $0_{\mathscr{H}} \preceq r$ to show that an element r is positive, and denote by $\mathscr{H}_+ and \mathscr{H}_\eth$ the set of positive elements and the hermitian elements of $\mathscr{H}$, respectively, where $0_{\mathscr{H}}$ is the zero element in $\mathscr{H}$. There is a natural partial ordering on $\mathscr{H}_\eth$ which is given by $r \preceq s$ if and only if $0_{\mathscr{H}} \preceq s - r$. It is clear that if $r, s \in \mathscr{H}_{sa}$ and $c \in \mathscr{H}$, then $r \preceq s \Rightarrow c^*rc \preceq c^*sc$, and that if $r, s \in \mathscr{H}_+$ are invertible, then $r \preceq s \Longrightarrow \theta \preceq s^{-1} \preceq r^{-1}$. From now on, $\mathscr{H}'$ will denote the set $\{r \in \mathscr{H} : rs = sr, \forall s \in \mathscr{H}\}$.

Definition 2.1 ([7, 24]) Let Υ be a nonempty set. Suppose that the mapping $\rho : \Upsilon \times \Upsilon \to \mathscr{H}$ is defined, with the following properties:

1. $0_{\mathscr{H}} \preceq \rho(\aleph, \varpi)$ for all $\aleph, \varpi \in \Upsilon$ and $\rho(\aleph, \varpi) = 0_{\mathscr{H}}$ if and only if $\aleph = \varpi$;
2. $\rho(\aleph, \varpi) = \rho(\varpi, \aleph)$ for all $\aleph, \varpi \in \Upsilon$;
3. $\rho(\aleph, \varpi) \preceq \rho(\aleph, \gamma) + \rho(\gamma, \varpi)$ for all $\aleph, \varpi, \gamma \in \Upsilon$.

Then ρ is said to be a $\mathscr{C}^\star$-algebra-valued metric on Υ, and $(\Upsilon, \mathscr{H}, \rho)$ is said to be a $\mathscr{C}^\star$-algebra-valued metric space.

The following definition was introduced by Ma and Jiang [28].

Definition 2.2 Let Υ be a nonempty set and $s \in \mathscr{H}$ such that $s \succeq I$. Suppose that the mapping $\rho : \Upsilon \times \Upsilon \to \mathscr{H}$ is defined, with the following properties:

1. $0_{\mathscr{H}} \preceq \rho(\aleph, \varpi)$ for all $\aleph, \varpi \in \Upsilon$;
2. $\rho(\aleph, \varpi) = 0_{\mathscr{H}}$ if and only if $\aleph = \varpi$;
3. $\rho(\aleph, \varpi) = \rho(\varpi, \aleph)$ for all $\aleph, \varpi \in \Upsilon$;
4. $\rho(\aleph, \varpi) \preceq s(\rho(\aleph, \gamma) + \rho(\gamma, \varpi))$ for all $\aleph, \varpi, \gamma \in \Upsilon$.

Then ρ is said to be a $\mathscr{C}^\star$-algebra-valued b-metric on Υ, and $(\Upsilon, \mathscr{H}, \rho)$ is said to be a $\mathscr{C}^\star$-algebra-valued b-metric space.

Now, we recall the definition of a C^*-algebra-valued partial b-metric space introduced by Mlaiki et al [26].

Definition 2.3 Let Υ be a nonempty set and $s \in \mathscr{H}$ such that $s \succeq I$. Suppose that the mapping $\rho : \Upsilon \times \Upsilon \to \mathscr{H}$ is defined, with the following properties:

(A1) $0_{\mathscr{H}} \preceq \rho(\aleph, \varpi)$ for all $\aleph, \varpi \in \Upsilon$ and $\rho(\aleph, \aleph) = \rho(\varpi, \varpi) = \rho(\aleph, \varpi)$ if and only if $\aleph = \varpi$;

(A2) $\rho(\aleph, \aleph) \preceq \rho(\aleph, \varpi)$;

(A3) $\rho(\aleph, \varpi) = \rho(\varpi, \aleph)$ for all $\aleph, \varpi \in \Upsilon$;

(A4) $\rho(\aleph, \varpi) \preceq s(\rho(\aleph, \gamma) + \rho(\gamma, \varpi)) - \rho(\gamma, \gamma)$ for all $\aleph, \varpi, \gamma \in \Upsilon$.

Then ρ is said to be a $\mathscr{C}^\star$-algebra-valued partial b-metric on Υ, and $(\Upsilon, \mathscr{H}, \rho)$ is said to be a $\mathscr{C}^\star$-algebra-valued partial b-metric space.

Example 2.1 Let $\Upsilon = [0, 1]$ and $\mathscr{H} = \mathcal{M}_2(\mathbb{C})$, the class of bounded and linear operators on a Hilbert space $\mathbb{C}^2$. Define $\rho : \Upsilon \times \Upsilon \to \mathscr{H}$ by

$$\rho(\aleph, \varpi) = \begin{bmatrix} |\aleph - \varpi|^2 & 0 \\ 0 & \Bbbk|\aleph - \varpi|^2 \end{bmatrix} + \begin{bmatrix} \max\{\aleph, \varpi\}^2 & 0 \\ 0 & \Bbbk \max\{\aleph, \varpi\}^2 \end{bmatrix},$$

where $\Bbbk \geq 0$ and for all $\aleph, \varpi \in \Upsilon$. Then, $(\Upsilon, \mathscr{H}, \rho)$ is a $\mathscr{C}^\star$-algebra-valued partial b-metric space. However, it is easy to see that $(\Upsilon, \mathscr{H}, \rho)$ is not a $\mathscr{C}^*$-algebra-valued b-metric space.

To substantiate the claim, for any nonzero element $\aleph \in \Upsilon$, we have

$$\rho(\aleph, \aleph) = \begin{bmatrix} \aleph^2 & 0 \\ 0 & \Bbbk\aleph^2 \end{bmatrix} \neq \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix} = 0_{\mathscr{H}}$$

Therefore, $(\Upsilon, \mathscr{H}, \rho)$ is not a $\mathscr{C}^*$-algebra-valued b-metric space.

Definition 2.4 A sequence $\{\aleph_\alpha\}$ in $(\Upsilon, \mathscr{H}, \rho)$ is called convergent (with respect to $\mathscr{H}$) to a point $\aleph \in \Upsilon$ if, for given $\epsilon > 0$, there exists $\mathfrak{k} \in \mathbb{N}$ such that $\|\rho(\aleph_\alpha, \aleph) - \rho(\aleph, \aleph\| < \epsilon$, for all $\alpha > \mathfrak{k}$. We denote it by

$$\lim_{\alpha \to \infty} \rho(\aleph_\alpha, \aleph) = \rho(\aleph, \aleph).$$

Definition 2.5 A sequence $\{\aleph_\alpha\}$ in $(\Upsilon, \mathscr{H}, \rho)$ is called Cauchy (with respect to $\mathscr{H}$) if $\lim_{\alpha \to \infty} \rho(\aleph_\alpha, \aleph_\mathrm{m})$ exists and it is finite.

Definition 2.6 The triplet $(\Upsilon, \mathscr{H}, \rho)$ is called a complete C^*-algebra-valued partial b-metric space if every Cauchy sequence in Υ is convergent to some point $\aleph$ in Υ such that

$$\lim_{\alpha \to \infty} \rho(\aleph_\alpha, \aleph_\mathrm{m}) = \lim_{\alpha \to \infty} \rho(\aleph_\alpha, \aleph) = \rho(\aleph, \aleph).$$

Definition 2.7 ([22]) Let Υ be a nonempty set. An element $(\aleph, \varpi) \in \Upsilon \times \Upsilon$ is said to be

(1) a coupled fixed point of the mapping $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ if $\mathcal{T}(\aleph, \varpi) = \aleph$ and $\mathcal{T}(\varpi, \aleph) = \varpi$.

(2) a coupled coincidence point of the mapping $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ and $g : \Upsilon \to \Upsilon$ if $\mathcal{T}(\aleph, \varpi) = g\aleph$ and $\mathcal{T}(\varpi, \aleph) = g\varpi$. In this case $(g\aleph, g\varpi)$ is said to be a coupled point of coincidence.

(3) a common coupled fixed point of the mapping $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ and $g : \Upsilon \to \Upsilon$ if $\mathcal{T}(\aleph, \varpi) = g\aleph = \aleph$ and $\mathcal{T}(\varpi, \aleph) = g\varpi = \varpi$.

Note that Definition 2.7(3) reduces to Definition 2.7(1) if the mapping g is the identity mapping.

Definition 2.8 ([22]) The mappings $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ and $g : \Upsilon \to \Upsilon$ is said to be ω-compatible if $g(\mathcal{T}(\aleph, \varpi)) = \mathcal{T}(g\aleph, g\varpi)$ whenever $g\aleph = \mathcal{T}(\aleph, \varpi)$ and $g\varpi = \mathcal{T}(\varpi, \aleph)$.

In this paper, we prove coupled fixed point theorems on C^*-algebra-valued partial b-metric space.

3 Main results

In this section we shall prove some common coupled fixed point theorems for different contractive mappings in the setting of $\mathscr{C}^\star$-algebra-valued partial b-metric spaces. Now we give our main results.

Theorem 3.1 *Let $(\Upsilon, \mathscr{H}, \rho)$ be a complete $\mathscr{C}^\star$-algebra-valued partial b-metric space with coefficient s. Suppose that the mappings $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ and $g : \Upsilon \to \Upsilon$ satisfy the following*

condition:

$$\rho\big(\mathcal{T}(\aleph,\varpi),\mathcal{T}(\imath,\nu)\big) \preceq r^{\star}\rho(g\aleph,g\imath)r + r^{\star}\rho(g\varpi,g\nu)r \quad \text{for any } \aleph,\varpi,\imath,\nu \in \Upsilon, \tag{1}$$

where $r \in \mathscr{H}$ *with* $\|r\| < \frac{1}{\sqrt{2}}$ *and* $\|s\|\|\sqrt{2}r\|^2 < 1$. *If* $\mathcal{T}(\Upsilon \times \Upsilon) \subseteq g(\Upsilon)$ *and* $g(\Upsilon)$ *is complete in* Υ, *then* $\mathcal{T}$ *and* g *have a coupled coincidence point and* $\rho(g\aleph,g\aleph) = 0_{\mathscr{H}}$ *and* $\rho(g\varpi,g\varpi) = 0_{\mathscr{H}}$. *Moreover, if* $\mathcal{T}$ *and* g *are* ω*-compatible, then they have a unique common coupled fixed point in* Υ.

Proof Take $\aleph_0, \varpi_0 \in \Upsilon$, and let $g(\aleph_1) = \mathcal{T}(\aleph_0,\varpi_0)$ and $g(\varpi_1) = \mathcal{T}(\varpi_0,\aleph_0)$. One can obtain two sequences $\{\aleph_\alpha\}$ and $\{\varpi_\alpha\}$ by continuing this process such that $g(\aleph_{\alpha+1}) = \mathcal{T}(\aleph_\alpha,\varpi_\alpha)$ and $g(\varpi_{\alpha+1}) = \mathcal{T}(\varpi_\alpha,\aleph_\alpha)$. From (1), we get

$$\begin{aligned}\rho(g\aleph_\alpha,g\aleph_{\alpha+1}) &= \rho\big(\mathcal{T}(\aleph_{\alpha-1},\varpi_{\alpha-1}),\mathcal{T}(\aleph_\alpha,\varpi_\alpha)\big)\\ &\preceq r^{\star}\big(\rho(g\aleph_{\alpha-1},g\aleph_\alpha)\big)r + r^{\star}\big(\rho(g\varpi_{\alpha-1},g\varpi_\alpha)\big)r\\ &\preceq r^{\star}\big(\rho(g\aleph_{\alpha-1},g\aleph_\alpha)\big) + \big(\rho(g\varpi_{\alpha-1},g\varpi_\alpha)\big)r.\end{aligned} \tag{2}$$

Similarly,

$$\begin{aligned}\rho(g\varpi_\alpha,g\varpi_{\alpha+1}) &= \rho\big(\mathcal{T}(\varpi_{\alpha-1},\aleph_{\alpha-1}),\mathcal{T}(\varpi_\alpha,\aleph_\alpha)\big)\\ &\preceq r^{\star}\big(\rho(g\varpi_{\alpha-1},g\varpi_\alpha)\big)r + r^{\star}\big(\rho(g\aleph_{\alpha-1},g\aleph_\alpha)\big)r\\ &\preceq r^{\star}\big(\rho(g\varpi_{\alpha-1},g\varpi_\alpha)\big) + \big(\rho(g\aleph_{\alpha-1},g\aleph_\alpha)\big)r.\end{aligned} \tag{3}$$

Let

$$\beth_\alpha = \rho(g\aleph_\alpha,g\aleph_{\alpha+1}) + \rho(g\varpi_\alpha,g\varpi_{\alpha+1}),$$

and now from (2) and (3), we have

$$\begin{aligned}\beth_\alpha &= \rho(g\aleph_\alpha,g\aleph_{\alpha+1}) + \rho(g\varpi_\alpha,g\varpi_{\alpha+1})\\ &\preceq r^{\star}\big(\rho(g\aleph_{\alpha-1},g\aleph_\alpha) + \rho(g\varpi_{\alpha-1},g\varpi_\alpha)\big)r + r^{\star}\big(\rho(g\varpi_{\alpha-1},g\varpi_\alpha) + \rho(g\aleph_{\alpha-1},g\aleph_\alpha)\big)r\\ &\preceq (\sqrt{2}r)^{\star}\big(\rho(g\aleph_{\alpha-1},g\aleph_\alpha) + \rho(g\varpi_{\alpha-1},g\varpi_\alpha)\big)(\sqrt{2}r)\\ &\preceq (\sqrt{2}r)^{\star}\beth_{\alpha-1}(\sqrt{2}r),\end{aligned}$$

which, together with the property: if $s,\mathfrak{t} \in \mathscr{H}_{\mathfrak{d}}$, then $s \preceq \mathfrak{t}$ implies $r^{\star}sr \preceq r^{\star}\mathfrak{t}r$ (Theorem 2.2.5 in [27]), yields that for each $\alpha \in \mathbb{N}$,

$$0_{\mathscr{H}} \preceq \beth_\alpha \preceq (\sqrt{2}r)^{\star}\beth_{\alpha-1}(\sqrt{2}r) \preceq \cdots \preceq \big[(\sqrt{2}r)^{\star}\big]^{\alpha}\beth_0(\sqrt{2}r)^{\alpha}.$$

If $\beth_0 = 0_{\mathscr{H}}$, then we know that $\mathcal{T}$ and g have a coupled coincidence point $(\aleph_0,\varpi_0)$. Now, letting $0_{\mathscr{H}} \prec \beth_0$, we can obtain for $\wp > \alpha$, $\alpha, \wp \in \mathbb{N}$,

$$\rho(g\aleph_\alpha,g\aleph_\wp) \preceq s\big(\rho(g\aleph_\alpha,g\aleph_{\alpha+1}) + \rho(g\aleph_{\alpha+1},g\aleph_\wp)\big) - \rho(g\aleph_{\alpha+1},g\aleph_{\alpha+1})$$

$$
\begin{aligned}
&\preceq s\rho(g\aleph_\alpha, g\aleph_{\alpha+1}) + s^2\big(\rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+2}) + \rho(g\aleph_{\alpha+2}, g\aleph_\wp)\big) \\
&\quad - \rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+1}) - \rho(g\aleph_{\alpha+2}, g\aleph_{\alpha+2}) \\
&\preceq s\rho(g\aleph_\alpha, g\aleph_{\alpha+1}) + s^2\rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+2}) \\
&\quad + \cdots + s^{\wp-\alpha-1}\big(\rho(g\aleph_{\wp-2}, g\aleph_{\wp-1}) + \rho(g\aleph_{\wp-1}, g\aleph_\wp)\big) \\
&\quad - \rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+1}) - \cdots - \rho(g\aleph_{\wp-1}, g\aleph_{\wp-1}) \\
&\preceq s\rho(g\aleph_\alpha, g\aleph_{\alpha+1}) + s^2\rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+2}) \\
&\quad + \cdots + s^{\wp-\alpha-1}\rho(g\aleph_{\wp-2}, g\aleph_{\wp-1}) + s^{\wp-\alpha-1}\rho(g\aleph_{\wp-1}, g\aleph_\wp), \\
\rho(g\varpi_\alpha, g\varpi_\wp) &\preceq s\big(\rho(g\varpi_\alpha, g\varpi_{\alpha+1}) + \rho(g\varpi_{\alpha+1}, g\varpi_\wp)\big) - \rho(g\varpi_{\alpha+1}, g\varpi_{\alpha+1}) \\
&\preceq s\rho(g\varpi_\alpha, g\varpi_{\alpha+1}) + s^2\big(\rho(g\varpi_{\alpha+1}, g\varpi_{\alpha+2}) + \rho(g\varpi_{\alpha+2}, g\varpi_\wp)\big) \\
&\quad - \rho(g\varpi_{\alpha+1}, g\varpi_{\alpha+1}) - \rho(g\varpi_{\alpha+2}, g\varpi_{\alpha+2}) \\
&\quad \preceq s\rho(g\varpi_\alpha, g\varpi_{\alpha+1}) + s^2\rho(g\varpi_{\alpha+1}, g\varpi_{\alpha+2}) \\
&\quad + \cdots + s^{\wp-\alpha-1}\big(\rho(g\varpi_{\wp-2}, g\varpi_{\wp-1}) + \rho(g\varpi_{\wp-1}, g\varpi_\wp)\big) \\
&\quad - \rho(g\varpi_{\alpha+1}, g\varpi_{\alpha+1}) - \cdots - \rho(g\varpi_{\wp-1}, g\varpi_{\wp-1}) \\
&\quad \preceq s\rho(g\varpi_\alpha, g\varpi_{\alpha+1}) + s^2\rho(g\varpi_{\alpha+1}, g\varpi_{\alpha+2}) \\
&\quad + \cdots + s^{\wp-\alpha-1}\rho(g\varpi_{\wp-2}, g\varpi_{\wp-1}) + s^{\wp-\alpha-1}\rho(g\varpi_{\wp-1}, g\varpi_\wp).
\end{aligned}
$$

Consequently,

$$
\begin{aligned}
&\rho(g\aleph_\alpha, g\aleph_\wp) + \rho(g\varpi_\alpha, g\varpi_\wp) \\
&\quad \preceq s\Im_\alpha + s^2\Im_{\alpha+1} + \cdots + s^{\wp-\alpha-1}\Im_{\wp-2} \\
&\qquad + s^{\wp-\alpha-1}\Im_{\wp-1} \\
&\quad = s\sum_{\Bbbk=\alpha}^{\wp-2} s^{\Bbbk-\alpha}\big[(\sqrt{2}r)^\star\big]^\Bbbk \Im_0[\sqrt{2}r]^\Bbbk \\
&\qquad + s^{\wp-\alpha-1}\big[(\sqrt{2}r)^\star\big]^{\wp-1}\Im_0[\sqrt{2}r]^{\wp-1} \\
&\quad = s\sum_{\Bbbk=\alpha}^{\wp-2} s^{\Bbbk-\alpha}\big[(\sqrt{2}r)^\star\big]^\Bbbk \Im_0^{\frac{1}{2}}\Im_0^{\frac{1}{2}}[\sqrt{2}r]^\Bbbk \\
&\qquad + s^{\wp-\alpha-1}\big[(\sqrt{2}r)^\star\big]^{\wp-1}\Im_0^{\frac{1}{2}}\Im_0^{\frac{1}{2}}[\sqrt{2}r]^{\wp-1} \\
&\quad = s\sum_{\Bbbk=\alpha}^{\wp-2} s^{\Bbbk-\alpha}\big[\Im_0^{\frac{1}{2}}(\sqrt{2}r)^\Bbbk\big]^\star\big[\Im_0^{\frac{1}{2}}(\sqrt{2}r)^\Bbbk\big] \\
&\qquad + s^{\wp-\alpha-1}\big[\Im_0^{\frac{1}{2}}(\sqrt{2}r)^{\wp-1}\big]^\star\big[\Im_0^{\frac{1}{2}}(\sqrt{2}r)^{\wp-1}\big] \\
&\quad = s\sum_{\Bbbk=\alpha}^{\wp-2} s^{\Bbbk-\alpha}\big|\Im_0^{\frac{1}{2}}(\sqrt{2}r)^\Bbbk\big|^2 \\
&\qquad + s^{\wp-\alpha-1}\big|\Im_0^{\frac{1}{2}}(\sqrt{2}r)^{\wp-1}\big|^2
\end{aligned}
$$

$$
\begin{aligned}
&\preceq \left\| s \sum_{\Bbbk=\alpha}^{\wp-2} s^{\Bbbk-\alpha} \left| \Im_0^{\frac{1}{2}} (\sqrt{2}r)^{\Bbbk} \right|^2 \right\| I \\
&\quad + \left\| s^{\wp-\alpha-1} \left| \Im_0^{\frac{1}{2}} (\sqrt{2}r)^{\wp-1} \right|^2 \right\| I \\
&\preceq \|s\| \sum_{\Bbbk=\alpha}^{\wp-2} \|s\|^{\Bbbk-\alpha} \left\| \Im_0^{\frac{1}{2}} \right\|^2 \left\| (\sqrt{2}r)^{\Bbbk} \right\|^2 I \\
&\quad + \|s\|^{\wp-\alpha-1} \left\| \Im_0^{\frac{1}{2}} \right\|^2 \left\| (\sqrt{2}r)^{\wp-1} \right\|^2 I \\
&\preceq \|s\|^{1-\alpha} \left\| \Im_0^{\frac{1}{2}} \right\|^2 \sum_{\Bbbk=\alpha}^{\wp-2} \|s\|^{\Bbbk} \left\| (\sqrt{2}r)^2 \right\|^{\Bbbk} I \\
&\quad + \|s\|^{-\alpha} \|s\|^{\wp-1} \left\| \Im_0^{\frac{1}{2}} \right\|^2 \left\| (\sqrt{2}r)^{\wp-1} \right\|^2 I \\
&\preceq \|s\|^{1-\alpha} \left\| \Im_0^{\frac{1}{2}} \right\|^2 \sum_{\Bbbk=\alpha}^{\wp-2} \left(\|s\| \left\| (\sqrt{2}r)^2 \right\| \right)^{\Bbbk} I \\
&\quad + \|s\|^{-\alpha} \left\| \Im_0^{\frac{1}{2}} \right\|^2 \left(\|s\| \left\| (\sqrt{2}r)^2 \right\| \right)^{\wp-1} I \\
&\to 0 \quad \text{as } (\wp, \alpha \to \infty),
\end{aligned} \tag{4}
$$

which follows from the observation that the sum in the first term is a geometric series and $\|s\|\|(\sqrt{2}r)^2\| < 1$ implies that $(\|s\|\|(\sqrt{2}r)^2\|)^{\wp-1} \to 0$ and $(\|s\|\|(\sqrt{2}r)^2\|)^{\alpha} \to 0$. This proves that $\{g\aleph_\alpha\}$ and $\{g\varpi_\alpha\}$ are Cauchy sequences in $g(\Upsilon)$. Since $\{g\varpi_\alpha\}$ is complete, there exist $\aleph, \varpi \in \Upsilon$ such that

$$
\begin{aligned}
&\rho(g\aleph, g\aleph) = \lim_{n\to\infty} \rho(g\aleph_\alpha, g\aleph) = \lim_{n\to\infty} \rho(g\aleph_\alpha, g\aleph_m), \\
&\rho(g\varpi, g\varpi) = \lim_{n\to\infty} \rho(g\varpi_\alpha, g\varpi) = \lim_{n\to\infty} \rho(g\varpi_\alpha, g\varpi_m).
\end{aligned}
$$

By (4), we have

$$
\lim_{n\to\infty} \rho(g\aleph_\alpha, g\aleph) + \lim_{n\to\infty} \rho(g\varpi_\alpha, g\varpi) = \rho(g\aleph, g\aleph) + \rho(g\varpi, g\varpi) = 0_{\mathscr{H}}.
$$

Now, we prove that $\mathcal{T}(\aleph, \varpi) = g\aleph$ and $\mathcal{T}(\varpi, \aleph) = g\varpi$. For that we have

$$
\begin{aligned}
\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big) &\preceq s\big(\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph_{\alpha+1}\big) + \rho(g\aleph_{\alpha+1}, g\aleph)\big) - \rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+1}) \\
&\preceq s\rho\big(\mathcal{T}(\aleph, \varpi), \mathcal{T}(\aleph_\alpha, \varpi_\alpha)\big) + s\rho(g\aleph_{\alpha+1}, g\aleph) \\
&\preceq sr^\star \rho(g\aleph_\alpha, g\aleph)r + sr^\star \rho(g\varpi_\alpha, g\varpi)r + s\rho(g\aleph_{\alpha+1}, g\aleph).
\end{aligned}
$$

Taking the limit as $\alpha \to \infty$ in the above relation, we get $\rho(\mathcal{T}(\aleph, \varpi), g\aleph) = 0_{\mathscr{H}}$ and hence $\mathcal{T}(\aleph, \varpi) = g\aleph$. Similarly, $\mathcal{T}(\varpi, \aleph) = g\varpi$. Therefore, $\mathcal{T}$ and g have a coupled coincidence point $(\aleph, \varpi)$.

Now if $\mathcal{T}$ and g have a coupled coincidence point $(\aleph', \varpi')$, then

$$
\begin{aligned}
&\rho\big(g\aleph, g\aleph'\big) = \rho\big(\mathcal{T}(\aleph, \varpi), \mathcal{T}\big(\aleph', \varpi'\big)\big) \preceq r^\star \rho\big(g\aleph, g\aleph'\big)r + r^\star \rho\big(g\varpi, g\varpi'\big)r, \\
&\rho\big(g\varpi, g\varpi'\big) = \rho\big(\mathcal{T}(\varpi, \aleph), \mathcal{T}\big(\varpi', \aleph'\big)\big) \preceq r^\star \rho\big(g\varpi, g\varpi'\big)r + r^\star \rho\big(g\aleph, g\aleph'\big)r,
\end{aligned}
$$

and hence

$$\rho\big(g\aleph, g\aleph'\big) + \rho\big(g\varpi, g\varpi'\big) \preceq (\sqrt{2}r)^{\star}\big(\rho\big(g\aleph, g\aleph'\big) + \rho\big(g\varpi, g\varpi'\big)\big)(\sqrt{2}r),$$

which further induces that

$$\big\|\rho\big(g\aleph, g\aleph'\big) + \rho\big(g\varpi, g\varpi'\big)\big\| \preceq \big\|(\sqrt{2}r)\big\|^2 \big\|\rho\big(g\aleph, g\aleph'\big) + \rho\big(g\varpi, g\varpi'\big)\big\|.$$

Since $\|(\sqrt{2}r)\| \ll 1$, then $\|\rho(g\aleph, g\aleph') + \rho(g\varpi, g\varpi')\| = 0$. Hence, we get $g\aleph = g\aleph'$ and $g\varpi = g\varpi'$. Similarly, we can prove that $g\aleph = g\varpi'$ and $g\varpi = g\aleph'$. Then $\mathcal{T}$ and g have a unique coupled point of coincidence $(g\aleph, g\aleph)$. Moreover, if $\nu = g\aleph$, then $\nu = g\aleph = \mathcal{T}(\aleph, \aleph)$. Since $\mathcal{T}$ and g are ω-compatible,

$$g\nu = g(g\aleph) = g\big(\mathcal{T}(\aleph, \aleph)\big) = \mathcal{T}(g\aleph, g\aleph) = \mathcal{T}(\nu, \nu),$$

which means that $\mathcal{T}$ and g have a coupled point of coincidence $(g\nu, g\nu)$. By the uniqueness, we know $g\nu = g\aleph$, which yields that $\nu = g\nu = \mathcal{T}(\nu, \nu)$. Therefore, F and g have a unique common coupled fixed point (ν, ν). □

Example 3.2 Let $\Upsilon = \mathcal{R}$ and $\mathscr{H} = \mathcal{M}_2(\mathbb{C})$ and the map $\rho : \Upsilon \times \Upsilon \rightarrowtail \mathscr{H}$ is defined by

$$\rho(\aleph, \varpi) = \begin{bmatrix} |\aleph - \varpi|^2 & 0 \\ 0 & \Bbbk|\aleph - \varpi|^2 \end{bmatrix} + \begin{bmatrix} \max\{\aleph, \varpi\}^2 & 0 \\ 0 & \Bbbk \max\{\aleph, \varpi\}^2 \end{bmatrix},$$

where $\Bbbk \geqslant 0$ is a constant. Then $(\Upsilon, \mathscr{H}, \rho)$ is a complete $\mathscr{C}^{\star}$-algebra-valued partial b-metric space. Consider the mappings $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ with $\mathcal{T}(\aleph, \varpi) = \frac{\aleph + \varpi}{2}$ and $g : \Upsilon \to \Upsilon$ with $g(\aleph) = 2\aleph$. Set $\lambda \in \mathbb{C}$ with $|\lambda| < \frac{1}{\sqrt{2}}$, and $r = \left[\begin{smallmatrix} \lambda & 0 \\ 0 & \lambda \end{smallmatrix}\right]$, then $r \in \mathscr{H}$ and $\|r\|_{\infty} = |\lambda|$. Clearly, $\mathcal{T}$ and g are ω-compatible. Moreover, one can verify that $\mathcal{T}$ satisfies the contractivity condition

$$\rho\big(\mathcal{T}(\aleph, \varpi), \mathcal{T}(u, \nu)\big) \preceq r^{\star}\mathcal{T}(\aleph, u)r + r^{\star}\mathcal{T}(\varpi, \nu)r \quad \text{for any } \aleph, \varpi, u, \nu \in \Upsilon.$$

In this case, $(0, 0)$ is a coupled coincidence point of $\mathcal{T}$ and g. Moreover, $(0, 0)$ is a unique common coupled fixed point of $\mathcal{T}$ and g.

Corollary 3.3 *Let $(\Upsilon, \mathscr{H}, \rho)$ be a complete $\mathscr{C}^{\star}$-algebra-valued partial b-metric space with coefficient s. Suppose that the mapping $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ satisfies the following condition*:

$$\rho\big(\mathcal{T}(\aleph, \varpi), \mathcal{T}(u, \nu)\big) \preceq r^{\star}\rho(\aleph, u)r + r^{\star}\rho(\varpi, \nu)r \quad \textit{for any } \aleph, \varpi, u, \nu \in \Upsilon, \tag{5}$$

where $r \in \mathscr{H}$ with $\|r\| < \frac{1}{\sqrt{2}}$ and $\|s\|\|\sqrt{2}r\|^2 < 1$. Then $\mathcal{T}$ has a unique coupled fixed point.

Before going to another theorem, we recall the following lemma of [27].

Lemma 3.4 *Suppose that $\mathscr{H}$ is a unital $\mathscr{C}^{\star}$-algebra with a unit $1_{\mathscr{H}}$.*

1. *If $r \in \mathscr{H}_{+}$ with $\|r\| < \frac{1}{2}$, then $1_{\mathscr{H}} - r$ is invertible.*
2. *If $r, \mathfrak{b} \in \mathscr{H}_{+}$ and $r\mathfrak{b} = \mathfrak{b}r$, then $0_{\mathscr{H}} \preceq r\mathfrak{b}$.*
3. *If $r, \mathfrak{b} \in \mathscr{H}_{\mathfrak{d}}$ and $\mathfrak{t} \in \mathscr{H}_{+}'$ then $r \preceq \mathfrak{b}$ deduces $\mathfrak{t}r \preceq \mathfrak{t}\mathfrak{b}$, where $\mathscr{H}_{+}' = \mathscr{H}_{+} \cap \mathscr{H}'$.*

Theorem 3.5 *Let $(\Upsilon, \mathscr{H}, \rho)$ be a complete $\mathscr{C}^*$-algebra-valued partial b-metric space with coefficient s. Suppose that the mappings $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ and $g : \Upsilon \to \Upsilon$ satisfies the following condition*:

$$\rho\big(\mathcal{T}(\aleph, \varpi), \mathcal{T}(u, v)\big) \preceq r\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big) + \mathfrak{b}\rho\big(\mathcal{T}(u, v), gu\big), \tag{6}$$

for any $\aleph, \varpi, u, v \in \Upsilon$, where $r, \mathfrak{b} \in \mathscr{H}'_+$ with $\|r\| + \|\mathfrak{b}\| < 1$. If $\mathcal{T}(\Upsilon \times \Upsilon) \subseteq g(\Upsilon)$ and $g(\Upsilon)$ is complete in Υ, then $\mathcal{T}$ and g have a coupled coincidence point and $\rho(g\aleph, g\aleph) = 0_{\mathscr{H}}$ and $\rho(g\varpi, g\varpi) = 0_{\mathscr{H}}$. Moreover, if $\mathcal{T}$ and g are ω-compatible, then they have unique common coupled fixed point in Υ.

Proof As in the proof of Theorem 3.1, construct two sequences $\{\aleph_\alpha\}$ and $\{\varpi_\alpha\}$ in Υ such that $g\aleph_{\alpha+1} = \mathcal{T}(\aleph_\alpha, \varpi_\alpha)$ and $g\varpi_{\alpha+1} = \mathcal{T}(\varpi_\alpha, \aleph_\alpha)$. Then by applying (6), we have

$$(1_{\mathscr{H}} - \mathfrak{b})\rho(g\aleph_\alpha, g\aleph_{\alpha+1}) \preceq r\rho(g\aleph_\alpha, g\aleph_{\alpha-1}),$$
$$(1_{\mathscr{H}} - \mathfrak{b})\rho(g\varpi_\alpha, g\varpi_{\alpha+1}) \preceq r\rho(g\varpi_\alpha, g\varpi_{\alpha-1}).$$

Since $r, \mathfrak{b} \in \mathscr{H}'_+$ with $\|r\| + \|\mathfrak{b}\| < 1$, we have $1_{\mathscr{H}} - \mathfrak{b}$ is invertible and $(1_{\mathscr{H}} - \mathfrak{b})^{-1}r \in \mathscr{H}'_+$. Therefore

$$\rho(g\aleph_\alpha, g\aleph_{\alpha+1}) \preceq (1_{\mathscr{H}} - \mathfrak{b})^{-1}r\rho(g\aleph_\alpha, g\aleph_{\alpha-1}),$$
$$\rho(g\varpi_\alpha, g\varpi_{\alpha+1}) \preceq (1_{\mathscr{H}} - \mathfrak{b})^{-1}r\rho(g\varpi_\alpha, g\varpi_{\alpha-1}).$$

Then

$$\big\|\rho(g\aleph_\alpha, g\aleph_{\alpha+1})\big\| \preceq \big\|(1_{\mathscr{H}} - \mathfrak{b})^{-1}r\big\|\big\|\rho(g\aleph_\alpha, g\aleph_{\alpha-1})\big\|,$$
$$\big\|\rho(g\varpi_\alpha, g\varpi_{\alpha+1})\big\| \preceq \big\|(1_{\mathscr{H}} - \mathfrak{b})^{-1}r\big\|\big\|\rho(g\varpi_\alpha, g\varpi_{\alpha-1})\big\|.$$

It follows from the fact

$$\big\|(1_{\mathscr{H}} - \mathfrak{b})^{-1}r\big\| \preceq \big\|(1_{\mathscr{H}} - \mathfrak{b})^{-1}\big\|\|r\| \preceq \sum_{\Bbbk=0}^{\infty}\|\mathfrak{b}\|^{\Bbbk}\|r\| = \frac{\|r\|}{1 - \|\mathfrak{b}\|} < 1$$

that $\{g\aleph_\alpha\}$ and $\{g\varpi_\alpha\}$ are Cauchy sequences in $g(\Upsilon)$ and therefore, by the completeness of $g(\Upsilon)$, there are $\aleph, \varpi \in \Upsilon$ such that $\lim_{\alpha\to\infty} g\aleph_\alpha = g\aleph$ and

$$\rho(g\aleph, g\aleph) = \lim_{n\to\infty}\rho(g\aleph_\alpha, g\aleph) = \lim_{n\to\infty}\rho(g\aleph_\alpha, g\aleph_\alpha) = 0_{\mathscr{H}},$$

$\lim_{\alpha\to\infty} g\varpi_\alpha = g\varpi$ and

$$\rho(g\varpi, g\varpi) = \lim_{n\to\infty}\rho(g\varpi_\alpha, g\varpi) = \lim_{n\to\infty}\rho(g\varpi_\alpha, g\varpi_\alpha) = 0_{\mathscr{H}}.$$

Since

$$\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big) \preceq s\big[\rho\big(g\aleph_{\alpha+1}, \mathcal{T}(\aleph, \varpi)\big) + \rho(g\aleph_{\alpha+1}, g\aleph)\big] - \rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+1})$$

$$\begin{aligned}
&\preceq s\big[\rho\big(g\aleph_{\alpha+1},\mathcal{T}(\aleph,\varpi)\big)+\rho(g\aleph_{\alpha+1},g\aleph)\big]\\
&= s\big(\rho\big(\mathcal{T}(\aleph_\alpha,\varpi_\alpha),\mathcal{T}(\aleph,\varpi)\big)+\rho(g\aleph_{\alpha+1},g\aleph)\big)\\
&\preceq sr\rho\big(\mathcal{T}(\aleph_\alpha,\varpi_\alpha),g\aleph_\alpha\big)+s\mathfrak{b}\rho\big(\mathcal{T}(\aleph,\varpi),g\aleph\big)+s\rho(g\aleph_{\alpha+1},g\aleph)\\
&\preceq sr\rho(g\aleph_{\alpha+1},g\aleph_\alpha)+s\mathfrak{b}\rho\big(\mathcal{T}(\aleph,\varpi),g\aleph\big)+s\rho(g\aleph_{\alpha+1},g\aleph),
\end{aligned}$$

hence

$$\rho\big(\mathcal{T}(\aleph,\varpi),g\aleph\big)\preceq(1-s\mathfrak{b})^{-1}sr\rho(g\aleph_{\alpha+1},g\aleph_\alpha)+(1-s\mathfrak{b})^{-1}s\rho(g\aleph_{\alpha+1},g\aleph_\alpha).$$

Then $\rho(\mathcal{T}(\aleph,\varpi),g\aleph)=0_{\mathscr{H}}$, or equivalently, $\mathcal{T}(\aleph,\varpi)=g\aleph$. Similarly, one can obtain $\mathcal{T}(\varpi,\aleph)=g\varpi$.

Now, if $(\aleph',\varpi')$ is another coupled coincidence point of $\mathcal{T}$ and g, then according to (6), we obtain

$$\begin{aligned}
\rho\big(g\aleph',g\aleph\big)&\preceq\rho\big(\mathcal{T}\big(\aleph',\varpi'\big),\mathcal{T}(\aleph,\varpi)\big)\\
&\preceq r\rho\big(\mathcal{T}\big(\aleph',\varpi'\big),g\aleph'\big)+\mathfrak{b}\rho\big(\mathcal{T}(\aleph,\varpi),g\aleph\big)\\
&= r\rho\big(g\aleph',g\aleph'\big)+\mathfrak{b}\rho(g\aleph,g\aleph)=0_{\mathscr{H}}
\end{aligned}$$

and

$$\begin{aligned}
\rho\big(g\varpi',g\varpi\big)&\preceq\rho\big(\mathcal{T}\big(\varpi',\aleph'\big),\mathcal{T}(\varpi,\aleph)\big)\\
&\preceq r\rho\big(\mathcal{T}\big(\varpi',\aleph'\big),g\varpi'\big)+\mathfrak{b}\rho\big(\mathcal{T}(\varpi,\aleph),g\varpi\big)\\
&= r\rho\big(g\varpi',g\varpi'\big)+\mathfrak{b}\rho(g\varpi,g\varpi)=0_{\mathscr{H}},
\end{aligned}$$

which implies that $g\aleph'=g\aleph$ and $g\varpi'=g\varpi$. Similarly, we have $g\aleph'=g\varpi$ and $g\varpi'=g\aleph$. Hence $\mathcal{T}$ and g have a unique coupled point of coincidence $(g\aleph,g\aleph)$. Moreover, we can show that $\mathcal{T}$ and g have a unique common coupled fixed point. □

Theorem 3.6 *Let $(\Upsilon,\mathscr{H},\rho)$ be a complete $\mathscr{C}^\star$-algebra-valued partial b-metric space with coefficient s. Suppose that the mappings $\mathcal{T}:\Upsilon\times\Upsilon\to\Upsilon$ and $g:\Upsilon\to\Upsilon$ satisfies the following condition*:

$$\rho\big(\mathcal{T}(\aleph,\varpi),\mathcal{T}(u,v)\big)\preceq r\rho\big(\mathcal{T}(\aleph,\varpi),gu\big)+\mathfrak{b}\rho\big(\mathcal{T}(u,v),g\aleph\big)\tag{7}$$

for any $\aleph,\varpi,u,v\in\Upsilon$, where $r,\mathfrak{b}\in\mathscr{H}'_+$ with $\|r\|+\|\mathfrak{b}\|<1$ and $\|sr\|+\|s\mathfrak{b}\|<1$. If $\mathcal{T}(\Upsilon\times\Upsilon)\subseteq g(\Upsilon)$ and $g(\Upsilon)$ is complete in Υ, then $\mathcal{T}$ and g have a coupled coincidence point and $\rho(g\aleph,g\aleph)=0_{\mathscr{H}}$ and $\rho(g\varpi,g\varpi)=0_{\mathscr{H}}$. Moreover, if $\mathcal{T}$ and g are ω-compatible, then they have unique common coupled fixed point in Υ.

Proof Following a similar argument given in the proof of Theorem 3.1, we construct two sequences $\{\aleph_\alpha\}$ and $\{\varpi_\alpha\}$ in Υ such that $g(\aleph_{\alpha+1})=\mathcal{T}(\aleph_\alpha,\varpi_\alpha)$ and $g(\varpi_{\alpha+1})=\mathcal{T}(\varpi_\alpha,\aleph_\alpha)$. Now, from (7), we have

$$\rho(g\aleph_\alpha,g\aleph_{\alpha+1})=\rho\big(\mathcal{T}(\aleph_{\alpha-1},\varpi_{\alpha-1}),\mathcal{T}(\aleph_\alpha,\varpi_\alpha)\big)$$

$$
\begin{aligned}
&\preceq r\rho\big(\mathcal{T}(\aleph_{\alpha-1},\varpi_{\alpha-1}),g\aleph_{\alpha}\big)+\mathfrak{b}\rho\big(\mathcal{T}(\aleph_{\alpha},\varpi_{\alpha}),g\aleph_{\alpha-1}\big)\\
&\preceq r\rho(g\aleph_{\alpha},g\aleph_{\alpha})+\mathfrak{b}\rho(g\aleph_{\alpha+1},g\aleph_{\alpha-1})\\
&\preceq r\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})+s\mathfrak{b}\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})+s\mathfrak{b}\rho(g\aleph_{\alpha},g\aleph_{\alpha-1})\\
&\quad-\mathfrak{b}\rho(\rho(g\aleph_{\alpha},g\aleph_{\alpha})\\
&\preceq r\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})+s\mathfrak{b}\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})+s\mathfrak{b}\rho(g\aleph_{\alpha},g\aleph_{\alpha-1}),
\end{aligned}
$$

from which it follows that

$$
\big(1_{\mathscr{H}}-(r+s\mathfrak{b})\big)\rho(g\aleph_{\alpha},g\aleph_{\alpha+1})\preceq s\mathfrak{b}\rho(g\aleph_{\alpha},g\aleph_{\alpha-1}). \tag{8}
$$

Because of the symmetry in (7), we have

$$
\begin{aligned}
\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})&=\rho\big(\mathcal{T}(\aleph_{\alpha},\varpi_{\alpha}),\mathcal{T}(\aleph_{\alpha-1},\varpi_{\alpha-1})\big)\\
&\preceq r\rho\big(\mathcal{T}(\aleph_{\alpha},\varpi_{\alpha}),g\aleph_{\alpha-1}\big)+\mathfrak{b}\rho\big(\mathcal{T}(\aleph_{\alpha-1},\varpi_{\alpha-1}),g\aleph_{\alpha}\big)\\
&\preceq r\rho(g\aleph_{\alpha+1},g\aleph_{\alpha-1})+\mathfrak{b}\rho(g\aleph_{\alpha},g\aleph_{\alpha})\\
&\preceq sr\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})+sr\rho(g\aleph_{\alpha},g\aleph_{\alpha-1})-r\rho(g\aleph_{\alpha},g\aleph_{\alpha})\\
&\quad+\mathfrak{b}\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})\\
&\preceq sr\rho(g\aleph_{\alpha+1},g\aleph_{\alpha})+sr\rho(g\aleph_{\alpha},g\aleph_{\alpha-1})+\mathfrak{b}\rho(g\aleph_{\alpha+1},g\aleph_{\alpha}),
\end{aligned}
$$

that is,

$$
\big(1_{\mathscr{H}}-(sr+\mathfrak{b})\big)\rho(g\aleph_{\alpha},g\aleph_{\alpha+1})\preceq sr\rho(g\aleph_{\alpha},g\aleph_{\alpha-1}). \tag{9}
$$

Now, from (8) and (9) we obtain that

$$
\left(1_{\mathscr{H}}-\frac{sr+s\mathfrak{b}+r+\mathfrak{b}}{2}\right)\rho(g\aleph_{\alpha},g\aleph_{\alpha+1})\preceq\frac{sr+s\mathfrak{b}}{2}\rho(g\aleph_{\alpha},g\aleph_{\alpha-1}).
$$

If $r,\mathfrak{b}\in\mathscr{H}'_{+}$ with $\|r+\mathfrak{b}\|\preceq\|r\|+\|\mathfrak{b}\|<1$ and $\|sr+s\mathfrak{b}\|\preceq\|sr\|+\|s\mathfrak{b}\|<1$, then $(1_{\mathscr{H}}-(\frac{sr+s\mathfrak{b}+r+\mathfrak{b}}{2}))^{-1}\in\mathscr{H}'_{+}$, which, together with Lemma 3.4 (part 3), yields that

$$
\rho(g\aleph_{\alpha},g\aleph_{\alpha+1})\preceq\left(1_{\mathscr{H}}-\left(\frac{sr+s\mathfrak{b}+r+\mathfrak{b}}{2}\right)\right)^{-1}\frac{sr+s\mathfrak{b}}{2}\rho(g\aleph_{\alpha},g\aleph_{\alpha-1}).
$$

Let $\mathfrak{e}=(1_{\mathscr{H}}-(\frac{sr+s\mathfrak{b}+r+\mathfrak{b}}{2}))^{-1}\frac{sr+s\mathfrak{b}}{2}$, then

$$
\|\mathfrak{e}\|=\left\|\left(1_{\mathscr{H}}-\left(\frac{sr+s\mathfrak{b}+r+\mathfrak{b}}{2}\right)\right)^{-1}\frac{sr+s\mathfrak{b}}{2}\right\|<1.
$$

The same argument as in the proof of Theorem 3.5 tells that $\{g\aleph_{\alpha}\}$ is a Cauchy sequence in $g(\Upsilon)$. Similarly, we can show that $\{g\varpi_{\alpha}\}$ is also a Cauchy sequence in $g(\Upsilon)$. Therefore, by the completeness of $g(\Upsilon)$, there are $\aleph,\varpi\in\Upsilon$ such that $\lim_{\alpha\rightarrowtail\infty}g\aleph_{\alpha}=g\aleph$ and

$$
\rho(g\aleph,g\aleph)=\lim_{n\to\infty}\rho(g\aleph_{\alpha},g\aleph)=\lim_{n\to\infty}\rho(g\aleph_{\alpha},g\aleph_{\alpha})=0_{\mathscr{H}},
$$

$\lim_{\alpha\rightarrowtail\infty} g\varpi_\alpha = g\varpi$ and

$$\rho(g\varpi, g\varpi) = \lim_{n\to\infty} \rho(g\varpi_\alpha, g\varpi) = \lim_{n\to\infty} \rho(g\varpi_\alpha, g\varpi_\alpha) = 0_{\mathscr{H}}.$$

Now, we prove that $\mathcal{T}(\aleph, \varpi) = g\aleph$ and $\mathcal{T}(\varpi, \aleph) = g\varpi$. For that we have

$$\begin{aligned}
\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big) &\preceq s\big[\rho\big(g\aleph_{\alpha+1}, \mathcal{T}(\aleph, \varpi)\big) + \rho(g\aleph_{\alpha+1}, g\aleph)\big] - \rho(g\aleph_{\alpha+1}, g\aleph_{\alpha+1}) \\
&\preceq s\rho\big(\mathcal{T}(\aleph_\alpha, \varpi_\alpha), \mathcal{T}(\aleph, \varpi)\big) + s\rho(g\aleph_{\alpha+1}, g\aleph) \\
&\preceq sr\rho\big(\mathcal{T}(\aleph_\alpha, \varpi_\alpha), g\aleph\big) + s\mathfrak{b}\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph_\alpha\big) + s\rho(g\aleph_{\alpha+1}, g\aleph) \\
&\preceq sr\rho(g\aleph_{\alpha+1}, g\aleph) + s\mathfrak{b}\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph_\alpha\big) + s\rho(g\aleph_{\alpha+1}, g\aleph),
\end{aligned}$$

and hence

$$\begin{aligned}
\big\|\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big)\big\| \preceq \|sr\| \big\|\rho(g\aleph_{\alpha+1}, g\aleph)\big\| &+ \|s\mathfrak{b}\| \big\|\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph_\alpha\big)\big\| \\
&+ \|s\| \big\|\rho(g\aleph_{\alpha+1}, g\aleph)\big\|.
\end{aligned}$$

By the continuity of the metric and norm, we know

$$\big\|\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big)\big\| \preceq \|s\mathfrak{b}\| \big\|\rho\big(\mathcal{T}(\aleph, \varpi), g\aleph\big)\big\|.$$

It follows from the fact $\|s\mathfrak{b}\| < 1$ that $\|\rho(\mathcal{T}(\aleph, \varpi), g\aleph)\| = 0$. Thus $\mathcal{T}(\aleph, \varpi) = g\aleph$. Similarly, $\mathcal{T}(\varpi, \aleph) = g\varpi$. Hence $(\aleph, \varpi)$ is a coupled coincidence point of $\mathcal{T}$ and g. The same reasoning as that in the proof of Theorem 3.5 tells us that $\mathcal{T}$ and g have a unique common coupled fixed point in Υ. □

4 Application

As an application of Corollary 3.3, we find an existence and uniqueness result for the following Fredholm integral equation:

$$\aleph(\mu) = \int_{\mathcal{E}} \mathcal{G}\big(\mu, p, \aleph(p), \varpi(p)\big)\, dp + \delta(\mu), \quad \mu, p \in \mathcal{E}, \tag{10}$$

where $\mathcal{E}$ is a measurable set, $\mathcal{G} : \mathcal{E} \times \mathcal{E} \times \mathbb{R} \times \mathbb{R} \to \mathbb{R}$, and $\delta \in \mathcal{L}^\infty(\mathcal{E})$. Let $\Upsilon = \mathcal{L}^\infty(\mathcal{E})$ be the set of essentially bounded measurable functions on $\mathcal{E}$. Consider the Hilbert space $\mathcal{L}^2(\mathcal{E})$. Let the set of all bounded linear operators on $\mathcal{L}^2(\mathcal{E})$ be denoted by $B(\mathcal{L}^2(\mathcal{E}))$. Obviously, $B(\mathcal{L}^2(\mathcal{E}))$ is a $\mathscr{C}^\star$-algebra with usual operator norm. Define $\rho : \Upsilon \times \Upsilon \to B(\mathcal{L}^2(\mathcal{E}))$ by (for all $\delta, \vartheta \in \Upsilon$)

$$\rho(\delta, \vartheta) = \pi_{|\delta-\vartheta|^2+I},$$

where $\pi_{\mathfrak{q}} : \mathcal{L}^2(\mathcal{E}) \to \mathcal{L}^2(\mathcal{E})$ is the multiplicative operator, which is defined by

$$\pi_{\mathfrak{q}}(\psi) = \mathfrak{q} \cdot \psi.$$

Now, we state and prove our result, as follows:

Theorem 4.1 *Suppose that* (*for all* $\aleph, \varpi, u, v \in \Upsilon$)

1. *There exist a continuous function* $\kappa : \mathcal{E} \times \mathcal{E} \to \mathbb{R}$ *and* $\theta \in (0,1)$ *such that*

$$\begin{aligned}&\big|\mathcal{G}\big(\mu,p,\aleph(p),\varpi(p)\big)-\mathcal{G}\big(\mu,p,u(p),v(p)\big)\big|\\&\quad\le\theta\big|\kappa(\mu,p)\big|\big(\big|\aleph(p)-u(p)\big|\\&\qquad+\big|\varpi(p)-v(p)\big|+I-\theta^{-1}I\big),\end{aligned}$$

   for all $\mu, p \in \mathcal{E}$; *and*

2. $\sup_{\mu\in\mathcal{E}} \int_{\mathcal{E}} |\kappa(\mu,p)|\,dp \le 1$.

Then, the integral equation (10) *has a unique solution in* Υ.

Proof Define $\mathcal{T} : \Upsilon \times \Upsilon \to \Upsilon$ by

$$\mathcal{T}(\aleph,\varpi)(\mu)=\int_{\mathcal{E}}\mathcal{G}\big(\mu,p,\aleph(p),\varpi(p)\big)\,dp+\delta(\mu),\quad\forall\mu,p\in\mathcal{E},$$

Set $\tau = \theta I$, then $\tau \in \mathscr{H}$. For any $z \in \mathcal{L}^2(\mathcal{E})$, we have

$$\begin{aligned}&\big\|\rho\big(\mathcal{T}(\aleph,\varpi),\mathcal{T}(u,v)\big)\big\|\\&\quad=\sup_{\|z\|=1}(\pi_{|\mathcal{T}(\aleph,\varpi)-\mathcal{T}(u,v)|^2+I}z,z)\\&\quad=\sup_{\|z\|=1}\int_{\mathcal{E}}\big(\big|\mathcal{T}(\aleph,\varpi)-\mathcal{T}(u,v)\big|^2+I\big)z(\mu)\overline{z(\mu)}\,d\mu\\&\quad\le\sup_{\|z\|=1}\int_{\mathcal{E}}\bigg[\int_{\mathcal{E}}\big|\mathcal{G}\big(\mu,p,\aleph(p),\varpi(p)\big)-\mathcal{G}\big(\mu,p,u(p),v(p)\big)\big|\,dp\bigg]^2\big|z(\mu)\big|^2\,d\mu\\&\qquad+\sup_{\|z\|=1}\int_{\mathcal{E}}\big|z(\mu)\big|^2\,d\mu I\\&\quad\le\sup_{\|z\|=1}\int_{\mathcal{E}}\bigg[\int_{\mathcal{E}}\theta\big|\kappa(\mu,p)\big|\big(\big|\aleph(p)-u(p)\big|\big|\varpi(p)-v(p)\big|+I-\theta^{-1}I\big)\,dp\bigg]^2\big|z(\mu)\big|^2\,d\mu+I\\&\quad\le\theta^2\sup_{\|z\|=1}\int_{\mathcal{E}}\bigg[\int_{\mathcal{E}}\big|\kappa(\mu,p)\big|\,dp\bigg]^2\big|z(\mu)\big|^2\,d\mu\big(\|\aleph-u\|_\infty^2+\|\varpi-v\|_\infty^2\big)\\&\quad\le\theta\sup_{\mu\in\mathcal{E}}\int_{\mathcal{E}}\big|\kappa(\mu,p)\big|\,dp\sup_{\|z\|=1}\int_{\mathcal{E}}\big|z(\mu)\big|^2\,d\mu\big(\|\aleph-u\|_\infty^2+\|\varpi-v\|_\infty^2\big)\\&\quad\le\theta\big[\|\aleph-u\|_\infty^2+\|\varpi-v\|_\infty^2\big]\\&\quad=\|\tau\|\big[\big\|\rho(\aleph,u)\big\|+\big\|\rho(\varpi,v)\big\|\big].\end{aligned}$$

Hence, all the hypotheses of Corollary 3.3 are verified and, consequently, the integral equation has a unique solution. □

5 Conclusion

In this paper, we proved some coupled fixed point theorems in a continuous C^*-algebra-valued partial b-metric space. Certainly, discontinuous C^*-algebra-valued partial b-metric spaces will be intersting for researchers.

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Not applicable.

Declarations

Competing interests
The authors declare that they have no competing interests.

Authors' contributions
All authors contributed equally and significantly in writing this article. All authors read and approved the final manuscript.

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Gmail Dr.MURALI RAMACHANDRAN <murali@jim.ac.in>

Pre-Incubator Course-Proposal-Reg.,

Dr. Aarthi Head - Operations, MCC-MRF Innovation Park <headoperationsmccmrfip@mcc.edu.in> 27 January 2023 at 23:31
To: "Dr.MURALI RAMACHANDRAN" <murali@jim.ac.in>
Cc: "Director,JIM" <dirjim@jim.ac.in>, jega patrick <patrick@jim.ac.in>, Ebin Ephrem Elavathingal <mail2ebine@gmail.com>

Dear Dr.Murali,

Greetings from MCC-MRF Innovation Park

Happy to extend our support for your wonderful initiative ' Startup Mela' as a Knowledge Partner.
With reference to the same, please find the proposal with estimated budget for the 2-Day 'Starting-Up 101: Bootcamp' at our premises in Tambaram, Chennai.

MCC-MRF innovation Park is a unit of Madras Christian College established to nurture the culture of research, innovation and entrepreneurship as well as supporting Startups. The Innovation Park spread across 45,000sq.ft houses centers for Data Sciences, Computational Sciences, Fintech and Education technology, entrepreneurship cafe, writers cafe and boutique.

We are looking forward to hosting you and together we can nurture the future.

Regards,
--
Dr. C. Aarthi Ram
Startup Ecosystem Enabler I Healthcare Startup Mentor
Head-Operations, MCC-MRF Innovation Park, MCC
www.mccmrfip.com

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MADRAS CHRISTIAN COLLEGE

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2 attachments

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Start IT.pptx
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Pre-Incubator Course-Proposal-Reg.,

Dr.MURALI RAMACHANDRAN <murali@jim.ac.in> 1 March 2023 at 12:57
To: "Dr. Aarthi Head - Operations, MCC-MRF Innovation Park" <headoperationsmccmrfip@mcc.edu.in>
Cc: "Director,JIM" <dirjim@jim.ac.in>, Rev Fr I Antony Inico SJ <inico@jim.ac.in>, pappu rajan <ap_rajan2001@jim.ac.in>, sulochana Arul <sulochana@jim.ac.in>

Madam,

Thank you for your acknowledgement to arrange training on the dates **16th -17th of March,2023.** After the 6th of March, we will send you the participant's number and details. You shall send your payment mode and terms. As discussed earlier, pls arrange one online session prior to the physical training which sets expectations and a brief outline of the training.

Note: Request you to "Reply all" for all your replies.

Dr.R Murali M.B.A., PhD, SET.,
Assistant Professor
Chair-Digital,FDP and Website Updates
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Phone:+91 7358051015

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Pre-Incubator Course-Proposal-Reg.,

Dr.MURALI RAMACHANDRAN <murali@jim.ac.in> 9 March 2023 at 10:22
To: "Dr. Aarthi Head - Operations, MCC-MRF Innovation Park" <headoperationsmccmrfip@mcc.edu.in>
Cc: "Director,JIM" <dirjim@jim.ac.in>, Rev Fr I Antony Inico SJ <inico@jim.ac.in>

Madam,

Greetings. As discussed and with subsequent approval provided by the Fr. Director, I am sending this email to initiate the BootCamp for the Startup Mela 5.0 prize winners.

The total number of participants who attend the program is **12**. (Out of which two are from LIBA Chennai. The cost of the programme is Rs 5000 +GST

I will be accompanying the participants.

Thank you so much for your attention and participation.

Request you to share the Proforma invoice and terms of payment.
Include our GST number in the invoice.

GST Number: 33AABTS7837C2ZJ
PAN: AABTS7837C

St. Joseph's Institute of Management is a unit of the Society of St Joseph's College, Trichy

Prize winners	Name of the Business Idea	Short Description	Prize winners	Email ID
Track 2	RENEWABLE CHARGER (Rs 20000) Engineering students	Renewable charger is a product that's based on solar energy. The product can be used as power bank to charge the electronic gadgets such as mobile phone, tablets, smart watches etc.	Venkatesh R (M) Sudhersun S (M)	sudhersenkavi@gmail.co Trichy
Track 3	VEGAN LEATHER (Rs 20000) Arts and Science Students	MANGO BIO LEATHER “Flexible leather-like sheet made from overripe mangoes. The material is thin but emulates the feeling of leather quite well but feels a little dryer to the touch than leathers used in most clothing items and accessories.	Edwin Nelsi M (F) Fahamitha S (F) Claire Jofiel E (F)	jofielclaire@gmail.com famidha26@gmail.com edwindhas4584@gmail.c Trichy
Track 4	ASTERMACH HIGH ALTITUDE SCIENCE (Rs 20000) **PG MBA students**	AsterMach High Altitude Science At AsterMach, we provide a platform for doing near space research and near space branding of a company or product. We make use of High-Altitude Balloon Technology to	Shobin Mathew B (M) Shurya S (F)	shobin.mathew@liba.edu shurya.shreekanthan@li Chennai

		achieve this feat. We have already conducted 3 space launches and are the first team in India to do near space branding.		
Track 5	SOUL-MATE (Rs 10000) **PG MBA students**	Providing comprehensive funeral services end to end who do not have the support of their wards at the time of their death	Arthanari Rajesh V (M) Kaushik Rohan P (M)	22pba209@jim.ac.in 22pba228@jim.ac.in
	SMART STORAGE HUB (Rs 10000) **PG MBA students**	Providing flexible storage option to the local merchants who find big trouble in storing their inventories through technology	Annestin Rohan W (M) Subramani AR (M) Anto Joe Renish R (M)	22pba2154@jim.ac.in 22pba218@jim.ac.in 22pba219@jim.ac.in Trichy

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Gmail Dr.MURALI RAMACHANDRAN <murali@jim.ac.in>

Bootcamp for prize winners @ Madras Christian College-MRF Incubation Park-Reg.,

Dr.MURALI RAMACHANDRAN <murali@jim.ac.in> 9 March 2023 at 10:42
To: sudhersenkavi@gmail.com, jofielclaire@gmail.com, famidha26@gmail.com, edwindhas4584@gmail.com, shobin.mathew@liba.edu, shurya.shreekanthan@liba.edu, 22pba209@jim.ac.in, 22pba228@jim.ac.in, 22pba215@jim.ac.in, 22PBA218@jim.ac.in, 22pba219@jim.ac.in
Cc: Rev Fr I Antony Inico SJ <inico@jim.ac.in>, "Director,JIM" <dirjim@jim.ac.in>, headop@mccmrfip.com

Dear Prize Winners of Startup Mela 5.0,

As promised, pre-incubator training is arranged at Madras Christian College-MRF Incubation Park, Chennai for all the prize winners. The program details are attached below.

Join the Whatsapp group for faster communication.

https://chat.whatsapp.com/KJCdrSvEkoxHPJxljqWn4o

An orientation towards the session will be online on 11th March (11.00 am)

You shall book tickets on your own accord and get prepared for the programme.

Points
1. An Accommodation is arranged in the International Hostel on twin sharing basis.
2. Food, Refreshments, Materials and a certificate will be provided upon the completion of the programme.
3. **JIM is taking care of the above-mentioned cost (other than your travel)**

The institute is paying Rs 5000+GST per head and requests you to make use of the program. The prize money will be credited upon the successful completion of the program.

Thanks in advance

Address of the Institute

Madras Christian College
Tambaram, Chennai – 600 059
Tamil Nadu, India

If you take the train, you shall get down at Tambaram station and move towards the railway platform which takes you to East Tambaram. The College is located opp to the Tambaram station only. If by bus, you shall get down in the Tambaram.

Prize winners	Name of the Business Idea	Prize winners	Email ID
Track 2	RENEWABLE CHARGER (Rs 20000) Engineering students	Venkatesh R (M) Sudhersun S (M)	sudhersenkavi@gmail.com Trichy
Track 3	VEGAN LEATHER (Rs 20000) Arts and Science Students	Edwin Nelsi M (F) Fahamitha S (F) Claire Jofiel E (F)	jofielclaire@gmail.com famidha26@gmail.com edwindhas4584@gmail.com Trichy
Track 4	ASTERMACH HIGH ALTITUDE	Shobin Mathew B	shobin.mathew@liba.edu shurya.shreekanthan@liba.edu

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	SCIENCE (Rs 20000) **PG MBA students**	(M) Shurya S (F)	Chennai
Track 5	SOUL-MATE (Rs 10000) **PG MBA students**	Arthanari Rajesh V (M) Kaushik Rohan P (M)	22pba209@jim.ac.in 22pba228@jim.ac.in Trichy
	SMART STORAGE HUB (Rs 10000) **PG MBA students**	Annestin Rohan W (M) Subramani AR (M) Anto Joe Renish R (M)	22pba215@jim.ac.in 22pba218@jim.ac.in 22pba219@jim.ac.in Trichy

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from **St. Joseph's Institute of Management** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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from **Loyola Institute of Business Administration** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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from **Loyola Institute of Business Administration** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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from **K. Ramakrishnan College of Engineering** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

Rev. Dr. P PAULRAJ SJ
DIRECTOR
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Dr. C. AARTHI RAM
HEAD OPERATIONS
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Dr. P. WILSON
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OF EXCELLENCE

THIS IS TO CERTIFY THAT

Sudherson S

from **K. Ramakrishnan College of Engineering** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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Claire Jofiel E

from **Shrimati Indira Gandhi College** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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Edwin Nelsi M

from **Shrimati Indira Gandhi College** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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Fahamitha S

from **Shrimati Indira Gandhi College** has successfully completed the 2-Day **'Kick-Start: Bootcamp'** Jointly organized by **MCC-MRF Innovation Park, Madras Christian College** and **St. Joseph's Institute of Management-(JIM), Trichy** as part of **Startup Mela 5.0** on **16 & 17 March 2023** at Madras Christian College.

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