Date: 04/10/2017

To,
The Principal
Karnatak Arts, Science and Commerce College, Bidar.

Sub: Request to grant permission to start Certificate course on "Basics of Cellular Communication" for the academic year 2017-18- Reg.

Respected Sir,

As per the guidelines issued by IQAC, we would like to start the Certificate course on "Basics of Cellular Communication" for the academic year 2017-18 with intake of 15 students. Please permit us to start the Certificate course and do the needful.

Thanking You.

rse In charge

Department of Electronics

Dept. of Electronics Earnatak Arts Sci. &Com. College Bidar

#### K R E SOCIETY'S

## KARNATAK ARTS SCIENCE AND COMMERCE COLLEGE, BIDAR

### Certificate Course on

### Basics of "Cellular Communication"

### Preamble

Our College is affiliated to Gulbarga University Kalaburagi and we are running Regular university curriculum. The curriculum is not providing all local needs and Hence we thought of giving knowledge of local technical needs to our students. In this connection, Dept. has constituted local BOS and framed a syllabus suitable for our students and got approved in local BOS. The selection of students by inviting application from electronic stream and based on pre appeared graduation marks in electronic subjects. The course covers over view of cellular communication, concept of frequency use and frequency spectrum conservation, channel accommodation, hand off, multipath fading MIMO and CDMA etc. For curriculum completing we are taking classes for 30 Hrs of 2 credits. The course provides for students to become self entrepreneur and they find an opportunity in communication sector as technical assistants.

He exam pattern: The examais of 50Marks of MCQ type.

ce and Commerce College.





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## **Department of Electronics**

Date: 17/10/2017

Minutes of Meeting of institutional Board for Certificate Course on

## **Basics of Cellular Communication**

The institutional BOS meeting of the Department for the Certificate Course on "Basics of Cellular Communication" is held on 17/10/2017 in Electronics Department at 10.30AM.

## **INSTITUTIONAL BOS**

Sl.No.	Name of Member	Institute	Designation		
1.	Sri. Biradar Rajendra	Associate Professor and Head, Deartment of Electronics, Karnatak Arts, Science and Commerce College, Bidar.	Chairman		
2.	Sri. M. S. Chelva	Associate Professor, Department of Electronic	Member, Internal Expert		
3.	Sri. A. V. Chikkamanur	Associate Professor, Department of Electronic	Member, Internal Expert		
4	Sri. S. V. Biradar	Associate Professor, Department of Electronic	Member, Internal Expert		
	Dr. S. B. Gama	Associate Professor and Head, Department of Electronic, B. V. B. College, Bidar.	Member, External Expert		

In the beginning of the meeting the Chairman of the Institutional BOS welcomed all the members and briefed them about the Department activities. The members expressed their appreciation and satisfaction about the courses and activities of the Department.

The institutional BOS discussed and resolved the following agendas.

Agenda 1. Start of the Certificate Course on "Basics of Cellular Communication".

Resolution: The BOS discussed the agenda 1 and resolved to start the said Certificate Course From the month of January 2018.

Agenda 2. Approval of syllabus for Certificate Course "Basics of Cellular Communication".

Resolution: The BOS discussed and approved the Syllabus for the said Certificate Course.

Agenda 3. Criteria for admission, regulation and policies to run the course pattern and Conduct of examination.

Resolution: The BOS discussed and approved the criteria for admission and resolved that the Student should have completed successfully 10+2 with Science faculty and Should be currently in B.sc Program with electronics as one of the subject of our College. In addition to this, BOS also discussed the rules and regulations to Smooth Conduct of course.

Meeting of the BOS is concluded with vote of thanks by Sri. Biradar Rajendra, HOD, Department of Electronics.

### **Members Present**

1. Biradar Rajendra

2. Sri M. S. Chelva

3. Sri. A. V. Chikkamanur

4. Sri. S. V. Biradar

IQAC Co-Ordina

5. Dr. S.B.Gama (External member)

Dept. of Electronics

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#### K R E SOCIETY'S

## KARNATAK ARTS SCIENCE AND COMMERCE COLLEGE, BIDAR

## Certificate Course on

## Basics of "Cellular Communication"

### **SYLLABUS**

Max: 30 Hrs

- Week 1: Overview of Cellular Systems and evolution of 2G/3G/4G.
- Week 2: Cellular Concepts-Frequency reuse, Co channel and Adjacent channel Interference, C/I, Handoff, Blocking, Erlangen capacity.
- Week 3: Wireless Propagation Part I-Link budget, Free Space path loss, Noise Figure of receiver.
- Week 4: Wireless Propagation Part II-Multipath fading, Shadowing, Fading Margin, shadowing margin.
- Week 5: Antenna Diversity.
- Week 6: Wireless Channel Capacity.
- Week 7: Necessities of Multiple input multiple outputs (MIMO) in Cellular Communication.

Week 8: Introduction of CDMA.

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### **Department of Electronics**

Date: 05/01/2018

#### NOTICE

All the students are hereby informed that, the Department of Electronics is starting the Certificate Course on Basics of Cellular Communication from the 16/01/2018; interested students can enrol their names on or before12/01/2018 in the Department of Electronics.

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## Karnatak Arts, Science and Commerce College, Bidar



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Certificate/Value added/Skill Development/Diploma/Advance Diploma Courses & IAS/IPS/NET/SET Coaching Classes

Name of the Department <u>Electoronics</u> Year <u>2017-18</u>
Name of the Student Sarmya Deshmulch
Father's/Guardian's Name Basavayay Deshmuch
Date of Birth Date Month Year  0 3 0 6 1998
Address for Correspondence :
H.No. 17-4-121/2,
Mr. 19-4-127/2, CMC Colony, Marlor Bidor
Semester/Class: 13.5 c VI
Register No : 1643150
Percentage of previous semester : 840/0
Contact No : 9900477316
E-Mail ID :
Course to be Joined: "Bacres of Collular Communication!

Signature of the Student

HOD/Coordinator

of Flectronics

Farastal Arts Sci. &Com. College Biday

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### **Basics of Cellular Communication**

List of Students (2017-18)

Sl. No	. Register Number	Name of the student
1	1643005	Aditya C Pote
2	1643028	Soumya Baswaraj Deshmukh
3	1643044	Anand S Biradar
4	1643046	Shivayogi Virpakshayya
5	1643048	Kiran Mallikarjun
6	1643059	B. Ganesh
7	1643087	Lumure VushalReddy
8	1643096	Basvaprasad Navaling Patil
9	1643107	Priya Biradar
10	1643116	Arun Kanteppa
11	1643133	Kalyani Shivraj
12	1643134	KushalRao BheemRao
13	1643152	Shilpa Rajkumar
14	1643161	Rajeshwari C
15	1643192	Divyashree Dhanraj

Course Incharge

Dept. of Electronics

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JCA

IQAC CO-ORDINATOR





College With Potential for Excellence

**Department of Electronics** 

Date: 19/03/2018

## **DPARTMENT OF ELECTRONICS**

Time-Table for 2017-18

**Subject: Basics of Cellular Communication** 

All the students of Certificate Course are here by informed to attend Classes regularly from 8-9am daily.





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#### **Department of Electronics**

Date: 23/03/2018

#### **NOTICE**

All the students enrolled in Certificate Course on "Basics of Cellular Communication" are hereby informed that, the course examination is scheduled on 02/04/2018 from 9-10AM.

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## Karnatak Arts, Science & Commerce College, Bidar



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#### **DPARTMENT OF ELECTRONICS**

**Subject: Basics of Cellular Communication** 

Date: 02/04/2018

Time: 1hour

Max.Marks:50

#### Answer all the questions carrying one mark each.

1. The modulation technique used for mobile communication systems during the world war II was

a)Amplitude modulation b)Frequency modulation c)ASK d) FSK

- 2. -----introduced Frequency Modulation for mobile communication systems in 1935. a)Edwin Armstrong b)Albert Einstein c) Galileo Galilei d) David Bohm
- 3. The early FM push-to-talk telephone systems were used in a)Simplex mode b)Half duplex mode c)Full duplex mode d) None of the above
- 4. World's first cellular system was developed by
  - a) Nippon Telephone & Telegraph b) Bellcore & Motorola

c). AT & T Laboratories

c). Qualcomm

- 5. Carrier frequency of a TV remote control is in the range
  - a) Of infrared b) < 100 MHz c) < 1 GHz d) < 2GHz
- 6. Half duplex system for communication has
  - a) Communication in single direction
  - b) Communication in single direction at a time
  - c) Communication in both directions at the same time
  - d) None of the above
- 7. MIN stands for
  - a) Mobile identification number
- b) Mobile internet
- c) Mobility in network
- d) None
- 8. The process of transferring a mobile station from one base station to another is
  - a). MSC
- b) Roamer
- c). Hand off
- d). Forward channel

- 9. PCN is
  - a) Wireless concept of making calls
- b) For receiving calls
- c) Irrespective of the location of the user. D) All of the above.
- 10. 2G cellular network uses
  - a) TDMA/FDD b) CDMA /FDD d) Digital modulation formats d) All of the above
- 11. NADC is a 2G standard for
  - a). TDMA b) CDMA
- c) Both a & b
- d) None of the above
- 12. 2G CDMA standards CDMA one supports up to
  - a) 8 users b) 64 users
- c)32 users d) 116users

13. 2G standards support

a)TDMA

- a). Limited internet browsing b) SMS c) Both a & b d) None of these.
- 14. The 2G GSM technology uses a carrier separation of
  - a) 1.25 MHz b) 200 KHz c)30 KHz d) 300 KHz
- 15. Commonly used mode for 3G network is

b) FDMA

16. The minimum spectrum allocation required for W- CDMA is

c) TDD d) FDD

a) 5MHz. b) 2MHz. c) 500 years
a) 5MHz. b) 2MHz c) 500 KHz d) 100 KHz
17. The interference between the neighbouring base station is avoided by a) Assigning different group of channels b) Using the state of
b) Using transmittens with 1955
b) Using transmitters with different levels.
c) Using different antenna's d) All of the above.
18. Radio canasity was be in some by
18. Radio capacity may be increased in cellular concept by
a) Increase in radio spectrum b) Increasing the number of bose station & rousing the channels.
<ul><li>b) Increasing the number of base station &amp; reusing the channels.</li><li>c) Both a &amp; b</li></ul>
d) None of the above.
19. The shape of the cellular region for maximum radio coverage is
a) Circular b) Square c) Oval d) Hexagon.
20. Centre excited hexagonal cells use
a) Sectored directional antennas b) Omni directional antenna
c) Yagi Uda antenna d) None of the above
21. The strategies acquired for channel assignment are
a) Fixed b) Dynamic c) Regular d) Both a & b.
22. In a fixed channel assignment strategy, if all the assigned channels are
a) Gets transferred to another cell. b) Gets blocked
c) Is kept on waiting d) All of the above
23. 2G mobile communication operates up to speed.
a) 64 kbps b) 50 kbps c).60 kbps d) 40 kbps
24. Which of the following are the features of 2G mobile communication technology?
a) Better quality compared to 1G b) Supports multimedia
c) Supports text d) All the above
25. Is GPRS technology introduced along with 2G mobile communication technologies?
a) Yes b) No c) Maybe
26. Which of the following are the features supported by GPRS in 2G technology?
a) Emails b) Web browsing c) Downloads d) All the above
27. 2G technology with GPRS is also called as
a) 2.5 G b) 3G c) 4G d) 5G
28. Third-generation mobile communication technology is represented as
a) 3G b) 3.4 G c) 4G d) 2G
29. Which of the following are the 3G mobile communication features?
a) High internet speed b) High data speed c) 3D gaming d) All the above
30. What is the data speed range of 3G mobile communication?
a) 144kbps to 2Mbps b) 100kbps to 2 Mbps
c) 200kbps to 2Mbps d) 300 kbps to 345 Kbps
31. which of the following are web-based applications used by 3G?
a) Video conference b) Emails c) Multimedia d) All the above
32. Which of the following are the disadvantages of 3G technology?
a) Costly mobile devices b) Requires high infrastructure
c) High maintenance cost d) All the above
33. The next generation of 3G is
a) 3.2G b) 3.5G c) 3.6G d) 4G
34. Mobile is also called as

a) Cell phone b) Hand phone a) Malija ii i
35. GPS stands for
a) Global positioning systems b) Global partial system
c) Geo-positioning system d) All the above
36. The function of GPS is
a) Navigates to correct address on earth b) Locates address on earth
c) Points address  d) All the above
37. Which of the following are the components of GPS?
a) Satellites b) Ground stations c) Transmitter and receiver d) All the above
38. GPRS stands for
a)General packet radio receiver b) Geo packet radio receiver
c) Gradient packet radio receiver d) None of the above
39. GPRS is used in mobile technology.
a) 2G b) 3G c) 4G d) Both a and b
40 has led to the growth of mobile communication services.
a) Increase in battery consumption b) Increase in IC technology
c) Increase in DSP d) All the above
<ul><li>41. In cellular network frequency spectrum are divided into</li><li>a) Discrete channels b) Non-discrete channel c) Class of frequency d) None of the above</li></ul>
42 are added to geographic cells of a specific area.
a) Discrete channels b) Non-discrete channel c) Class of frequency d) None of the above
43. Analog cellular phone is generation technology. a) 1G b) 2G c) 3G d) 4G
44. Digital cellular phone is generation technology.  a) 1G b) 2G c) 3G d) 4G
45. AMPS stands for .
a) Advanced mobile telephony system b) Advanced medium telephony system
c) Automobile telephony system d) None of the above
46. 1G technology was developed based on
a) Advanced mobile telephony system b) Advanced medium telephony system
c) Automobile telephony system d) None of the above
47. AMPS is a service.
a) Standard cellular telephone service b) Cellular telephone service
c) Standard cellular service d) None of the above
48. AMPS in 1G were introduced by
a) Illinois Bell b) Richard c) Charles d) Dennis
49. Analogue cellular phone has a maximum deviation of the frequency of for 100% modulation.
a) +/- 12 KHz b) +/- 11 KHz c) +/- 10 KHz d) +/- 9 KHz
50. AMPS uses modulation technique.
a) Frequency division multiple access b) Phase modulation
c) Amplitude modulation d) All the above





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College With Potential for Excellence

### **DPARTMENT OF ELECTRONICS**

Subject: Basics of Cellular Communication

Examination Attendance - 2017-18

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Sl. No.	Register Number	Name of the student	Signature
1	1643005	Aditya C Pote	
2	1643028	Soumya Baswaraj Deshmukh	Su
3	1643044	Anand S Biradar	
4	1643046	Shivayogi Virpakshayya	200
5	1643048	Kiran Mallikarjun	WO
6	1643059	B. Ganesh	8
7	1643087	Lumure VushalReddy	au s
8	1643096	Basvaprasad Navaling Patil	Care
9	1643107	Priya Biradar	Pluja
10	1643116	Arun Kanteppa	Aug
11	1643133	Kalyani Shivraj	Colyans
12	1643134	KushalRao BheemRao	K D
13	1643152	Shilpa Rajkumar	Shel
14	1643161	Rajeshwari C	Rajeshwart
15	1643192	Divyashree Dhanraj	Durya

Dept. of Electronics Rarmatak Arts Sci. &Com. College

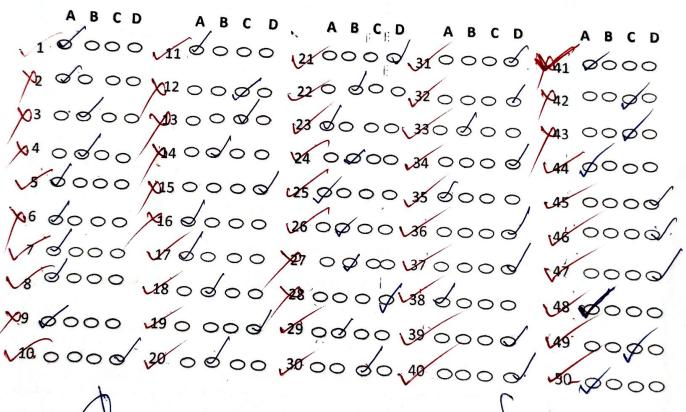
# KRE SOCIETY'S KARNATAK ARTS SCIENCE AND COMMERCE COLLEGE BIDAR

## DEPARTMENT OF ELECTRONICS

### **RESPONSE SHEET**

3) Class in which studying: BSC VI 4) Reg. No. of student: 16 43005 5) Date of exam:	1)	Name of the course:	Basics of cellular	Communication
4) Reg. No. of student: $6 \times 0.05$ 5) Date of exam:	2)	Name of the student:	$\lambda$ $\lambda$ $\lambda$ $\lambda$ $\lambda$	
4) Reg. No. of student: 16 43005  5) Date of exam:	3)	Class in which studying:	_ '	
5) Date of exam:	4)	Reg. No. of student:		(36)
() - $()$ $($ - $)$ $()$ $($ - $)$ $()$ $($ - $)$	5)	Date of exam:	02-04-2018	1300

Note: All the students are informed to put Right mark for the correct answer in the appropriate circle



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SIGNATURE OF THE HO.D.

Dept. of Electronics

Carnatak Arts Sci. &Com. College Bidss





**College With Potential for Excellence** 

### **DPARTMENT OF ELECTRONICS**

### **Subject: Basics of Cellular Communication**

**MARKS-LIST** 

Sl. No.	Register Number	Name of the student	Marks obtained out of <u>50</u>
1	1643005	Aditya C Pote	36
2	1643028	Soumya Baswaraj Deshmukh	38
3	1643044	Anand S Biradar	39
4	1643046	Shivayogi Virpakshayya	41
5	1643048	Kiran Mallikarjun	37
6	1643059	B. Ganesh	39
7	1643087	Lumure VushalReddy	38
8	1643096	Basvaprasad Navaling Patil	40
9	1643107	Priya Biradar	36
10	1643116	Arun Kanteppa	39
11	1643133	Kalyani Shivraj	37
12	1643134	KushalRao BheemRao	37
13	1643152	Shilpa Rajkumar	38
14	1643161	Rajeshwari C	39
15	1643192	Divyashree Dhanraj	38

Course Incharge

Dept. of Electronics Mermetak Arts Sci. &Com. College Bldue

**IQAC** Coordinator

Kamatak Arts, Science and Commerce College, BIUAR

O-ORDINATOR

## KARNATAK ARTS SCIENCE AND COMMERCE COLLEGE, BIDAR

### Certificate Course on

## Basics of "Cellular Communication"

### **OUTCOMES**

- 1. Discuss different type's cellular concepts with respect generations.
- 2. Identify different types of propagation effects.
- 3. To have the knowledge of the mobile system specifications.
- 4. Classify multiple access techniques in mobile communication.
- 5. Outline idea of CDMA techniques.

6. Analyze various methodologies to improve the cellular capacity.

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Dept. of Electronics

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## Karnatak Arts, Science & Commerce College, Bidar



(Affiliated to Gulbarga University) College With Potential for Excellence

### Add-on course Report and Outcome Analysis (2017-18)

Name of the Course: Add -on Basics of Cellular Communication

Name of the Department: Electronics

Name of the BOS Chairman: Dr. Rajendra Biradar( Assoc. Prof. and Head Dept. of Electronics)

No. of the Students Enrolled: 15

Date of BOS Meeting: 17 October, 2017

Date of Start of Course: 16, Jan, 2018

Date of End of Course: 12 March 2018

Our college offers the curriculum as prescribed by Gulbarga University Kalaburagi. The curriculum does not address every local need, thus we considered teaching our students about local technological demands. In this regard, the Department established Institutional BOS, created a syllabus that was appropriate for our students, and obtained Institutional BOS approval. Applicants from the electronic stream were invited to apply, and students were chosen based on their prior academic performance in electronic-related topics. The course provides an overview of mobile communication, the usage of frequencies and the preservation of the frequency spectrum, channel accommodation, handoff, and multipath fading MIMO and CDMA, among other topics. We are enrolling in 30-hour classes for two credits to finish our curriculum. The programme enables students to start their own businesses and helps them obtain employment as technical assistants in the communication industry.

The course was 30 contact hrs of 2 credits, total 15 students actively participated in the course and certificates were distributed after conducting the MCQ based course end examination.

Outcome of the Course: The course helps to gain the entrepreneur and industrial skills which helps the students to become self entrepreneur and get opportunity in UPS and Inverter Industries.

Carnataka ANGIRAL & Com. College BIDAR-585401

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Signature of H.O.D.

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3	(70	Anya Norayan Rao	-		1
4	[7]	Manta la kumav	-		1
	176	Geeta Baswaray	L		0
6	183	1 111 11 011	L	-	0
7	189	1 0	L		1
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Karnatak Arts, Science And Students Attendary	d

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Signature of H.O.D.