

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai) Kaikkurichi, Pudukkottai -622 303

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## **NAAC DOCUMENTS**



Quality Indicator Frame Work

# Criterion – 1

# CURRICULAR ASPECTS

Submitted by

# IQAC Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women



#### ACADEMIC YEAR 2020-2021 / ODD SEMESTER

### **1.2 Academic Flexibility (30)**

**1.2.1** Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

#### AND

**1.2.2** Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

| VAC Title:   | SMA   | ART M  | ATERIA    | ALS AND N    | MEAS | SURIN | NG TECHI | NIQUES           |      |      |
|--------------|---|--------|-----------|--------------|------|-------|----------|------------------|------|------|
|              | I   |        |           | l, B.E., M.S |      | ev)., |          |                  |      |      |
| Resource Per | Resource Person: Site Engineer & Supervisor,<br>Kamaal Constructions,                                     |        |           |              |      |       |          |                  |      |      |
|              | Aranthangi.   |        |           |              |      |       |          |                  |      |      |
| Date of cond | uct fro   | om :   | 30.11.202 | 20           | To:  | 05.12 | 2.2020   | <b>Duration:</b> | 36 H | ours |
| Organized D  | epartn  | nent : | CIVIL E   | NGINEERIN    | G    |       |          |                  |      |      |
| Participant  | Participant         2/ 3 /4         Semester:         ODD         No. of Students Registered :         27 |        |           |              |      |       |          |                  |      |      |
| Year:        |   |        |           |              |      |       |          | 8                |      |      |
| Venue: Or    | Venue:         Online mode Google Meet: <u>https://meet.google.com/qbb-gung-rps</u>                       |        |           |              |      |       |          |                  |      |      |

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SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN (Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

### **DEPARTMENT OF CIVIL ENGINEERING**

### ACADEMIC YEAR 2020-2021 / ODD SEMESTER

Date: 25/11/2020

#### **DEPARTMENT CIRCULAR**

Value added course offered by the Department of Civil Engineering for all Second, Third & Final year Civil Engineering students on **"Smart Materials and Measuring Techniques"** by **Kamaal Constructions** from 30.11.2020 to 05.12.2020 through online platform. Certificates will be issued to the eligible participants at the end of the Course.

| S.No. | Name of the Course                          | <b>Resource Person</b>  |
|-------|---|---|
| 1.    | Smart Materials and<br>Measuring Techniques | Er.M.Sakthivel, B.E., M.Sc (Rev).,<br>Site Engineer & Supervisor,<br>Kamaal Constructions,<br>Aranthangi. |

Hod/Civit

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

KAIKKURICHI.

PUDUKKOTTAI - 622 303

HOD /

Cc:

- Principal's Office
- IQAC Coordinator
- Class In charges II, III & IV-year of Civil Engineering
- II, III & IV-year Civil Engineering Students
- Notice Board

Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

### DEPARTMENT OF CIVIL ENGINEERING

### ACADEMIC YEAR 2020-2021 / ODD SEMESTER

### Value Added Course on "Smart Materials and Measuring Techniques"

### **SYLLABUS**

| S.NO | TOPIC COVERED  | DURATION<br>(in hours) | DATE       |
|------|--|------------------------|------------|
| 1    | Introduction to Smart Materials and Structures   | 3                      | 30.11.2020 |
| 2    | Instrumented structures functions and response   | 3                      | 30.11.2020 |
| 3    | Strain Measuring Techniques using Electrical strain gauges   | 3                      | 01.12.2020 |
| 4    | Wheatstone bridges, Strain Rosettes  | 3                      | 01.12.2020 |
| 5    | Physical Measurement using Piezo Electric Strain measurement   | 3                      | 02.12.2020 |
| 6    | Chemical and Bio-Chemical sensing in structural Assessment   | 3                      | 02.12.2020 |
| 7    | Actuator materials applications  | 3                      | 03.12.2020 |
| 8    | Electro magnetic actuation   | 3                      | 03.12.2020 |
| 9    | Data Acquisition and Processing in smart materials   | 3                      | 04.12.2020 |
| 10   | Sensors as Geometrical Processors  | 3                      | 04.12.2020 |
| 11   | Constant Voltage, Constant Current and Pulse Drive Methods   | 3                      | 05.12.2020 |
| 12   | Linear and Non-Linear, Passive, Semi-Active and<br>Active Control, Feedback and Feed forward Control<br>Strategies | 3                      | 05.12.2020 |
|      | Total Hours  | 36                     | -          |

VAC Coordinator

HoD/Civil HOD / CIVIL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI, PUDUKKOTTAI - 622 303

Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.



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### **DEPARTMENT OF CIVIL ENGINEERING**

### ACADEMIC YEAR 2020-2021 (ODD SEM) STUDENTS PARTICIPATION LIST-VAC PROGRAM SMART MATERIALS AND MEASURING TECHNIQUES

| S.NO | REG.NO       | NAME OF THE STUDENT | YEAR/BRANCH |
|------|--------------|---------------------|-------------|
| 1    | 912619103001 | AJITHA T            | II/CIVIL    |
| 2    | 912619103002 | ARULJENIFAR C       | II/CIVIL    |
| 3    | 912619103003 | DIVYAV              | II/CIVIL    |
| 4    | 912619103004 | MANGAIYARKARASI G   | II/CIVIL    |
| 5    | 912619103005 | MUTHULAKSHMI S      | II/CIVIL    |
| 6    | 912619103006 | PRAVEENA S          | II/CIVIL    |
| 7    | 912619103007 | PRIYADHARSHINI K    | II/CIVIL    |
| 8    | 912619103009 | RAGAVI V            | II/CIVIL    |
| 9    | 912619103010 | RAJATHI T           | II/CIVIL    |
| 10   | 912619103301 | LILLY JOHN J        | II/CIVIL    |
| 11   | 912619103302 | BHUVANI S           | II/CIVIL    |
| 12   | 912618103003 | MAHESHWARI V        | III/CIVIL   |
| 13   | 912618103005 | MEENACHI K          | III/CIVIL   |
| 14   | 912618103008 | SATHYA M            | III/CIVIL   |
| 15   | 912618103009 | SRIVIDHYA S         | III/CIVIL   |
| 16   | 912618103010 | UMAMAHESWARI K      | III/CIVIL   |
| 17   | 912617103001 | CHANDRIKA C         | IV/CIVIL    |
| 18   | 912617103002 | DHESIKAPARTHI D     | IV/CIVIL    |

Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukkottai Dt.

| 19 | 912617103003 | KARTHIKA K       | IV/CIVIL |
|----|--------------|------------------|----------|
| 20 | 912617103004 | KASTHURI K       | IV/CIVIL |
| 21 | 912617103005 | MONIKA K         | IV/CIVIL |
| 22 | 912617103006 | MUTHUMEENA P     | IV/CIVIL |
| 23 | 912617103007 | POTHUMPEN A      | IV/CIVIL |
| 24 | 912617103008 | PRIYADHARSHINI S | IV/CIVIL |
| 25 | 912617103009 | RAJESWARI J      | IV/CIVIL |
| 26 | 912617103010 | SIVAPRIYA S      | IV/CIVIL |
| 27 | 912617103701 | LAKSHMI A        | IV/CIVIL |

VAC Coordinator

HoD/Civil HOD/Civil SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI, PUDUKKOTTAI - 622 303

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CH. S. THILAGAVATHI M.E., Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kalksurchi - 522 303, Pudukotal DL



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### **DEPARTMENT OF CIVIL ENGINEERING**

### ACADEMIC YEAR 2020-2021 (ODD SEM)

### ATTENDANCE SHEET FOR VALUE ADDED COURSE- SMART MATERIALS AND MEASURING TECHNIQUES

| REG.NO       | NAME OF THE  | YEAR/  |  |  |  |  |  |   | 1  |  |  |  |  | 1   | NO OF<br>SESSIONS   |
|--------------|--|--|--|--|--|--|--|---|--|--|--|--|--|---|---|
| 912617103007 | STUDENT  | BRANCH   | FN   | AN   | FN   | AN   | FN   | AN  | FN   | AN   | FN   | AN   | FN   | AN  | ATTENDED  |
| 912619103001 | АЛТНА Т  | II/CIVIL   | 1  | . 1  | 1  | 1  | 1.   | 1:  | 1  | 1  | 1  | 1  | r  | a   | 11  |
| 912619103002 | ARULJENIFAR C  | II/CIVIL   | 1  | a  | 1  | 1  | 1  | 1   | 1  | 1  | 1  | 1  | 1  | 1   | 11  |
| 912619103003 | DIVYA V  | II/CIVIL   | 1  | ,  | ,  | 1  | 1  | a   | 1  | a  | 1  | 1  | 1  |   | 10  |
| 912619103004 | MANGAIYARKARASI<br>G   | II/CIVIL   | )  | 1  | 1  | 1  | 1  | . 1   | 1  | 1  | 1  | a  | 1  | 1   | 15  |
| 912619103005 | MUTHULAKSHMI S   | II/CIVIL   | 1  | 1  | 1  | 1  | 1  | 1   | 1  | 1  | 1  | 1  | 1  | 1   | 12  |
| 912619103006 | PRAVEENA S   | II/CIVIL   | )  | a  | 1  | a  | 1  | 1   | 1  | 1  | 1  | 1  | 1  | 1   | 10  |
| 912619103007 | PRIYADHARSHINI K   | II/CIVIL   | 1  | 1  | 1  | 1,   | 1  | a   | 1  | 1  | 1  | 1  | 1  | 1   | tI  |
| 912619103009 | RAGAVI V   | II/CIVIL   | 1  | 1  | 1  | ;  | ,  | 1   | 1  | 1  | 1  | a  | 1  | 1   | 11  |
| 912619103010 | RAJATHI T  | II/CIVIL   | 1  | 1  | 1  | 1  | 1  | 1   | 1  | a  | 1  | 1  | 1  | a   | 10  |
| 912619103301 | LILLY JOHN J   | II/CIVIL   |  | The  | 460  | AT   | ai ka n  | . Ph.   | 1  | 1  | 1  | 1  | 1  | 1   | 11  |
| 912619103302 | BHUVANI S  | II/CIVIL   | ,  |  | PRI  | VCIPA  |  |   | ,  | 1  | 1  | a  | 1  | 1   | 19  |
|              | REG.NO         912619103001         912619103002         912619103003         912619103004         912619103005         912619103006         912619103007         912619103007         912619103009         912619103010         912619103010         912619103301 | REG.NONAME OF THE<br>STUDENT912619103001AJITHA T912619103002ARULJENIFAR C912619103003DIVYA V912619103004MANGAIYARKARASI<br>G912619103005MUTHULAKSHMI S912619103006PRAVEENA S912619103007PRIYADHARSHINI K912619103009RAGAVI V912619103010LILLY JOHN J | REG.NONAME OF THE<br>STUDENTYEAR/<br>BRANCH912619103001AJITHA TII/CIVIL912619103002ARULJENIFAR CII/CIVIL912619103003DIVYA VII/CIVIL912619103004MANGAIYARKARASI<br>GII/CIVIL912619103005MUTHULAKSHMI SII/CIVIL912619103006PRAVEENA SII/CIVIL912619103007PRIYADHARSHINI KII/CIVIL912619103008RAGAVI VII/CIVIL912619103009RAJATHI TII/CIVIL912619103001LILLY JOHN JII/CIVIL | REG.NONAME OF THE<br>STUDENTYEAR/<br>BRANCH30.1912619103001AJITHA TII/CIVIL/912619103002ARULJENIFAR CII/CIVIL/912619103003DIVYA VII/CIVIL/912619103004MANGAIYARKARASI<br>GII/CIVIL/912619103005MUTHULAKSHMI SII/CIVIL/912619103006PRAVEENA SII/CIVIL/912619103007PRIYADHARSHINI KII/CIVIL/912619103009RAGAVI VII/CIVIL/912619103010RAJATHI TII/CIVIL/912619103302BHUVANI SAII/CIVIL/ | REG.NONAME OF THE<br>STUDENTYEAR/<br>BRANCH30.1.20912619103001AJITHA TII/CIVILIN912619103002ARULJENIFAR CII/CIVILI912619103003DIVYA VII/CIVILI912619103004MANGAIYARKARASI<br>GII/CIVILI912619103005MUTHULAKSHMI SII/CIVILI912619103006PRAVEENA SII/CIVILI912619103007PRIYADHARSHINI KII/CIVILI912619103008RAGAVI VII/CIVILI912619103009RAGAVI VII/CIVILI912619103010BHUVANI SII/CIVILI912619103302BHUVANI SII/CIVILI | REG.NONAME OF THE<br>STUDENTYEAR/<br>BRANCH30.1.2001.1912619103001AJITHA TII/CIVIL1NN912619103002ARULJENIFAR CII/CIVIL10.11912619103003DIVYA VII/CIVIL10.21912619103004MANGAIYARKARASIII/CIVIL111912619103005MUTHULAKSHMI SII/CIVIL111912619103006PRAVEENA SII/CIVIL111912619103007PRIYADHARSHINI KII/CIVIL111912619103008RAGAVI VII/CIVIL111912619103009RAGAVI VII/CIVIL111912619103000RAJATHI TII/CIVIL111912619103001BHUYANI SII/CIVIL111912619103302BHUYANI SII/CIVIL111 | REG.NONAME OF THE<br>STUDENTYEAR/<br>BRANCH30.1.2001.1.20912619103001AJITHA TII/CIVILINANFNAN912619103002ARULJENIFAR CII/CIVILIIIII912619103003DIVYA VII/CIVILIIIIII912619103004MANGAIYARKARASI<br>GII/CIVILIIIIII912619103005MUTHULAKSHMI SII/CIVILIIIIII912619103006PRAVEENA SII/CIVILIIIIII912619103007PRIYADHARSHINI KII/CIVILIIIIII912619103008RAGAVI VII/CIVILIIIIII912619103009RAGAVI VII/CIVILIIIIII912619103001BAJATHI TII/CIVILIIIIII912619103302BHUYANI SII/CIVILIIIIII | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH $30.1.20$ $01.2.20$ $02.1$ 912619103001         AJITHA T         II/CIVIL $I$ | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH         30.1 $\cdot$ 0         01.2 $\cdot$ 02.1 $\cdot$ 00.1           912619103001         AJITHA T         II/CIVIL         I         N | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH $30.1.20$ $01.2.20$ $02.1.20$ $03.1.20$ 912619103001         AJITHA T         II/CIVIL $IN$ $AN$ $FN$ $FN$ $FN$ $FN$ $FN$ $FN$ $FN$ $FN$ $FN$ </td <td>REG.NO         NAME OF THE<br/>STUDENT         YEAR/<br/>BRANCH         <math>30.1 \cdot 20</math> <math>01.2 \cdot 20</math> <math>02.1 \cdot 20</math> <math>03.1 \cdot 20</math>           912619103001         AJITHA T         II/CIVIL         <math>1</math> <math>N</math> <math>N</math></td> <td>REG.NO         NAME OF THE<br/>STUDENT         YEAR/<br/>BRANCH         <math>30.1.20</math> <math>01.2.20</math> <math>02.1.20</math> <math>03.1.20</math> <math>04.1.20</math>           912619103001         AJITHA T         II/CIVIL         <math>1</math> <math>N</math> <math>N</math></td> <td>REG.NO         NAME OF THE<br/>STUDENT         YEAR/<br/>BRANCH         30.1.20         91.2.20         93.2.20         94.2.20           912619103001         AJITHA T         II/CIVIL         I         AN         FN         AN         FN</td> <td>REG.NO         NAME OF THE<br/>STUDENT         YEAR/<br/>BRANCH         <math>30.1-20</math> <math>01.2-20</math> <math>0.1-2-0</math> <math>0.1-2-0</math></td> <td>REG.NO         NAME OF THE<br/>STUDENT         YEAR/<br/>BRANCH         <math>30.1 - 20</math> <math>01.2 - 20</math> <math>03.1 - 20</math> <math>04.1 - 20</math> <math>05.1 - 20</math>           912619103001         AJITHA T         II/CIVIL         <math>1</math> <math>N</math> <math>N</math><!--</td--></td> | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH $30.1 \cdot 20$ $01.2 \cdot 20$ $02.1 \cdot 20$ $03.1 \cdot 20$ 912619103001         AJITHA T         II/CIVIL $1$ $N$ | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH $30.1.20$ $01.2.20$ $02.1.20$ $03.1.20$ $04.1.20$ 912619103001         AJITHA T         II/CIVIL $1$ $N$ | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH         30.1.20         91.2.20         93.2.20         94.2.20           912619103001         AJITHA T         II/CIVIL         I         AN         FN         AN         FN | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH $30.1-20$ $01.2-20$ $0.1-2-0$ | REG.NO         NAME OF THE<br>STUDENT         YEAR/<br>BRANCH $30.1 - 20$ $01.2 - 20$ $03.1 - 20$ $04.1 - 20$ $05.1 - 20$ 912619103001         AJITHA T         II/CIVIL $1$ $N$ </td |

| 12 | 912618103003 | MAHESHWARI V     | III/CIVIL | 1   | 1 | 1  | a | 1 | 1 | 1 | a | 1 | 1 | 1 | 1 | to      |
|----|--------------|------------------|-----------|-----|---|----|---|---|---|---|---|---|---|---|---|---------|
| 13 | 912618103005 | MEENACHI K       | III/CIVIL | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 14 | 912618103008 | SATHYA M         | III/CIVIL | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 12      |
| 15 | 912618103009 | SRIVIDHYA S      | III/CIVIL | 1   | 1 | 1. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 16 | 912618103010 | UMAMAHESWARI K   | III/CIVIL | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | à | 11      |
| 17 | 912617103001 | CHANDRIKA C      | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 18 | 912617103002 | DHESIKAPARTHI D  | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 19 | 912617103003 | KARTHIKA K       | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 20 | 912617103004 | KASTHURI K       | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | 1 | 1 | a | 1 | 1 | r | 1 | []      |
| 21 | 912617103005 | MONIKA K         | IV/CIVIL  | 1   | 1 | ;  | 1 | 1 | 1 | 1 | 1 | 1 | a | 1 | 1 | ()      |
| 22 | 912617103006 | MUTHUMEENA P     | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 23 | 912617103007 | POTHUMPEN A      | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | a | 1 | 1 | 1 | 1 | 1 | 1 | viether |
| 24 | 912617103008 | PRIYADHARSHINI S | IV/CIVIL  | 1   | a | 1  | 1 | 1 | 1 | 1 | 1 | 1 | a | 1 | 1 | 10      |
| 25 | 912617103009 | RAJESWARI J      | IV/CIVIL  | 1   | 1 | 1  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |
| 26 | 912617103010 | SIVAPRIYA S      | IV/CIVIL  | 1   | 1 | 1  | a | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 11      |
| 27 | 912617103701 | LAKSHMI A        | IV/CIVIL  | 100 | 1 | 1  | , | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12      |

Kalkkurahi - 622 303, Pudukkodan Di

VAC Coordinator

Dr. S. THILAGAVATHI M.E., Ph.D., PRINCIPAL SF SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.

R 2026-2021 (ODD SEM)

HoD/Civil HOD / CIVIL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI, PUDUKKOTTAI - 622 303



Kaikkurchi - 622 303, Pudukkottai Dt.

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

|   |  | Rep   | ort on  | Value   | Add   | ed Cou  | irse  |  |                        |
|---|--|---|---|---|---|---|---|--|------------------------|
| Title:  | Smart Ma   | aterials a  | and Meas  | uring Te  | chniqu  | ies   |   |  |                        |
|   | E  | r.M.Sak   | thivel, B   | .E. M.S   | c (Rev  | ·)  |   |  |                        |
|   | C  |   | neer & Si   |   |   | /•,   |   |  |                        |
| Resource  | CISUII.  | -   | Constructi  | -   | -,  |   |   |  |                        |
|   |  | ranthan   |   | 10115,  |   |   |   |  |                        |
| Date of co  | nduct from :   |   | .2020   | To:   | 05.12.  | 2020  | Duration:   | 36 Hou                                 | rs                     |
|   | Department   |   | IL ENGI   |   |   |   |   | 50 1104                                |                        |
| Participan  |  | -   | mester:   | ODD   |   | No. of Stu  | idents Registe  | ered : 27                              | 7                      |
| Venue:  | Online mod   | le Google   | Meet: ht  | tns://mee   |   |   |   | ·                                      |                        |
|   |  |   |   |   |   |   | rse, Students c   | an able 4                              |                        |
| <ul> <li>the c</li> <li>Desc<br/>devi</li> <li>Deri</li> <li>Iden<br/>appl</li> <li>No. of</li> </ul> | utting-edge<br>ribe and iden<br>ces using sm<br>ve conceptua<br>tify, select an<br>ication areas | developm<br>ntify the l<br>art mater<br>al designs<br>nd use sm<br>ccessfully | hents in sm<br>basic fabric<br>ials.<br>for the pro-<br>hart materia<br>completed | art materi<br>cation and<br>oduction o<br>als for the | als for e<br>charact<br>of engine<br>fabricat | engineering<br>cerization to<br>cering devi<br>cion of eng<br>is <u>27 stud</u> | , and methodo<br>g systems.<br>echniques of l<br>ices using sma<br>ineering devic<br><u>ents</u> based on | Engineeri<br>art materi<br>ces in diff | ing<br>ials.<br>ferent |
| eligible  | to receive th  | ne certific   | n 60% on the  | total sco<br>VAC cou                                  | ore and<br>urse cond                          | secured m<br>ducted   | ore than 75%  |  |                        |
|   | rks)<br>AC Coordina<br>HIM.E.,Ph.  |   | С   | BHARATH   | I ENGIN                                       | IEERING<br>DMEN   |   |  | VOMEN                  |
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24/4, Athippa Complex, Bharathidasan Street, Aranthangi-614616

Er. S. Rawuther Appa B. E., M. Sc. (REV)

Licensed Building Surveyor

### CERTIFICATE OF PARTICIPATION

This is to certify that Ms.Ajitha T of II Year B.E-Civil Engineering, Sri Bharathi Engineering College for Women, Pudukkottai has successfully completed the Value Added course on "Smart Materials And Measuring Techniques" conducted from 30.11.2020 to 05.12.2020 (6days) during the Academic year 2020-2021.

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# **KAMAAL CONSTRUCTION**

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### CERTIFICATE OF PARTICIPATION

This is to certify that Ms.Meenachi K of III Year B.E-Civil Engineering, Sri Bharathi Engineering College for Women, Pudukkottai has successfully completed the Value Added course on "Smart Materials And Measuring Techniques" conducted from 30.11.2020 to 05.12.2020 (6days) during the Academic year 2020-2021.

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This is to certify that Ms.Karthika K of IV Year B.E-Civil Engineering, Sri Bharathi Engineering College for Women, Pudukkottai has successfully completed the Value Added course on "Smart Materials And Measuring Techniques" conducted from 30.11.2020 to 05.12.2020 (6days) during the Academic year 2020-2021.

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#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2020-2021 / ODD SEMESTER

#### Name of the Student :

Year/Sem:

#### AU Register Number:

Value Added Course on "Smart Materials and Measuring Techniques"

#### MCQ QUESTIONS (25X4 = 100 Marks)

- 1. Monel metal is an alloy of
  - a) Molybdenum and nickel
  - b) Nickel and copper

- c) Molybdenum and aluminiumd) Molybdenum and zinc
- 2. Thermoplastic resins are those polymers, which
  a) Has decreased plasticity at increasing temperature
  b) Cannot be moulded

c) Easily deform under pressure at high temperatured) None of these

- 3. Constantan used in thermocouples is an alloy of
  - a) Iron & copper
  - b) Copper & aluminium

c) Lead & tind) None of these

c) Artificial ageing

c) Martensite

d) None of these

d) Solution annealing

4. The heat treatment process applied to cold formed steel parts is

- a) Normalizing
- b) Tempering
- 5. A hardened steel essentially contains
  - a) Sorbite b) Troostite

iđA (s

6. Silicone rubber is not resistant to the corrosive action of
a) Sulphuric acid (10%)
b) Sulphuric acid (95%)
c) Ether
d) Both (b) and (c)

- 7. Which of the following mechanical properties of a material is most structure insensitive?
  a) Modulus of elasticity (young's modulus)
  b) Toughness
  c) Percentage reduction of area
  d) Tensile strength
- 8. Carbon percentage in medium carbon steel is arounda) 0.1 to 0.35c) 0.8 to 1.4

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b) 0.35 to 0.5 d) 1 to 1.5 9. Aluminium as a material of construction suffers from the disadvantage of a) Very high cost c) Very low strength to weight ratio b) Rather low tensile strength d) Scarce availability 10. Coke oven regenerators are made of bricks. c) Low thermal conductivity a) Fire clav d) High electrical conductivity b) Silica 11. Perspex is nothing but c) An alloy of lead and tin a) Acrylic sheet d) Aluminium foil clad with Bakelite b) An elastomer 12. Cementite is c) Characterized by an orthorhombic crystal a) Fe<sub>3</sub>C chemically structure b) A compound of carbon and iron d) All (a), (b) and (c)13. High degree of toughness is a must for a) High speed steel c) Cold work tool steel b) Cold work tool steel d) None of these 14. The phenomenon in which slow extension of material takes place with the time at constant load is called Diameter of Round Steel Fiber lies in the range of mm a) Plasticity c) Elasticity b) Creep d) Ductility 15. Ability of a material to be is indicated by its damping capacity. c) Absorb shock a) Withstand compression d) None of these b) Absorb vibration 16. A material is called 'ductile', if it can c) Fractured without deformation a) Drawn into wires b) Hammered to a thin sheet d) Made lustrous by heating it 17. Presence of manganese in alloy steel improves its a) Corrosion resistance c) Abrasion resistance & toughness d) Elasticity & creep resistance b) Cutting ability 18. Which of the following undergoes granular fracture? c) Cast iron a) Wrought iron b) Steel d) None of these 19. The most distinguished property of malleable cast iron is its high c) Malleability a) Ductility d) None of these b) Hardness 20. Teflon (PTFE) is corroded by AGAVATHI M.E., R.D. DL S.THILAGAVATHIME.Ph.D Dr. S.THIL PRINCIPAL

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a) Hydrochloric acid (10%)

b) Hydrochloric acid (95%)

c) Sulphuric acidd) None of these

- 21. Amount of energy that a material can absorb before its fracture is a measure of its
  - a) Toughnessb) Resilience

c) Malleabilityd) Ductility

- 22. Vycor, a widely used material for making 'thermal wells' in temperature measurement, is aa) Cermetb) Characterization (Content of the content of the content
  - b) Glass

d) Metallic alloy

23. Karbate is

a) A mixture of iron dust and saw dustb) Carbon impregnated with resin (usually Bakelite)

c) An acid resistant materiald) Both (b) and (c)

- 24. Invar used in thermocouples is an alloy of nickel and
  - a) Iron
  - b) Copper

- c) Chromium d) Lead
- 25. Ball bearings are generally made of
  - a) Plain carbon steel
  - b) Chrome carbon steel

c) Stainless steeld) Malleable cast iron

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### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2021-2022 / ODD SEMESTER

Value Added Course on "Smart Materials and Measuring Techniques"

| 1 | b | 6  | d | 11 | а | 16 | a | 21 | а |
|---|---|----|---|----|---|----|---|----|---|
| 2 | с | 7  | a | 12 | d | 17 | C | 22 | b |
| 3 | d | 8  | b | 13 | b | 18 | b | 23 | d |
| 4 | d | 9  | b | 14 | b | 19 | a | 24 | а |
| 5 | с | 10 | а | 15 | b | 20 | d | 25 | b |

#### ANSWER KEY

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Name: V. Ragavi Reg. NO: 912619103009 MCB Test-Smart materials & Measuring Techniques T) 2) C 3 Ð 4 D-5 CN D. 6 bx 1 8 b-9 6 10 a 11 a 12 de 13 CX 14 6. 15 6 16 a C. 17 18 b CX 19 20 d 21 a 22 6, 23 d Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL 24 a SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt. 25 6/

Name : K. Kasthurie Reg. No : 912617103004

Value Added Course MCQ Test - Smart materials and measuring techniques 6 () bx 2) 3) bx 4) d-5) C / d/ 6) 7) an 8) 61 9) 5/ a (0) 1) CX d 12) 13) 6-14) 6/ 15) 6 (6) a/ c/ 17) 6/ 18) F) C X 20) d Dr. S.THILAGAVATHI M.E., Ph.D., 21) a-PRINCIPAL **SRI BHARATHI ENGINEERING** 22) 6 -**COLLEGE FOR WOMEN** Kaikkurchi - 622 303, Pudukkottai Dt. 23) 6~ 24) a 25) 6

Name: Umamahesh parite MCQ Test on value added Smant materials & Measuring Techniques. Reg NO : 912618103010 1) 6/ d1) a 1 2) c 1 227 6/ 3) 0/ 23) d/ Alex 5) C/ 24) a 6) d 251.5 7) a/ 8) 5 / 9) C X 10) a ~ 11) bx 12) d/ 13) 6 / 14) CX 15) 6/ 167 a 17) ad .... 18) 5) / Dr. S.THILAGAVATHI M.E., Ph.D., 19) C/ PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN 20)0/ Kaikkurchi - 622 303, Pudukkottai Dt.



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### DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2020-2021 (ODD SEM)

### MARK SHEET FOR VALUE ADDED COURSE- SMART MATERIALS AND MEASURING TECHNIQUES

| 1 -  | 012618103000 | SRUVIDED A.S.       | HPC PAR           | ATTENDAN          | CE DETAILS              | VAC-M            | CQ TEST          | OVERALL                  |
|------|--------------|---------------------|-------------------|-------------------|-------------------------|------------------|------------------|--------------------------|
| S.NO | REG.NO       | NAME OF THE STUDENT | · YEAR/<br>BRANCH | No of<br>Sessions | Attendance<br>Mark(100) | No of<br>Correct | MCQ<br>Mark(100) | MARK(100)<br>(50% of A + |
| 13   | 013844166082 | VREXXEN X           | HARAN.            | Attended          | (A)                     | Answers          | (B)              | 50% of B)                |
| 1    | 912619103001 | АЈІТНА Т            | II/CIVIL          | 11                | 92                      | 20               | 80               | 86                       |
| 2    | 912619103002 | ARULJENIFAR C       | II/CIVIL          | , 11              | 92                      | 21               | 84               | 88                       |
| 3    | 912619103003 | DIVYA V             | II/CIVIL          | 10                | 83                      | 18               | 72               | 78                       |
| 4    | 912619103004 | MANGAIYARKARASI G   | II/CIVIL          | 11                | 92                      | 19               | . 76             | 84                       |
| 5    | 912619103005 | MUTHULAKSHMI S      | II/CIVIL          | 12                | 100                     | 20               | 80               | 90                       |
| 6    | 912619103006 | PRAVEENA S          | II/CIVIL          | 10                | 83                      | 19               | 76               | 80                       |

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| 7  | 912619103007 | PRIYADHARSHINI K | II/CIVIL  | 11              | 92  | 21  | 84 | 88 |
|----|--------------|------------------|-----------|-----------------|-----|-----|----|----|
| 8  | 912619103009 | RAGAVI V         | II/CIVIL  | 11              | 92  | 22  | 88 | 90 |
| 9. | 912619103010 | RAJATHI T        | II/CIVIL  | 10              | 83  | 17  | 68 | 76 |
| 10 | 912619103301 | LILLY JOHN J     | II/CIVIL  | 11              | 92  | .19 | 76 | 84 |
| 11 | 912619103302 | BHUVANI S        | II/CIVIL  | 11              | 92  | 17  | 68 | 80 |
| 12 | 912618103003 | MAHESHWARI V     | III/CIVIL | 10              | 83  | 17  | 68 | 76 |
| 13 | 912618103005 | MEENACHI K       | III/CIVIL | 12              | 100 | 20  | 80 | 90 |
| 14 | 912618103008 | SATHYA M         | III/CIVIL | 12              | 100 | 21  | 84 | 92 |
| 15 | 912618103009 | SRIVIDHYA S      | III/CIVIL | 12              | 100 | 22  | 88 | 94 |
| 16 | 912618103010 | UMAMAHESWARI K   | III/CIVIL |                 | 92  | 20  | 80 | 86 |
| 17 | 912617103001 | CHANDRIKA C      | IV/CIVIL  | 12              | 100 | 22  | 88 | 94 |
| 18 | 912617103002 | DHESIKAPARTHI D  | IV/CIVIL  | 12              | 100 | 20  | 80 | 90 |
| 19 | 912617103003 | KARTHIKA K       | IV/CIVIL  | 12              | 100 | 22  | 88 | 94 |
| 20 | 912617103004 | KASTHURI K       | IV/CIVIL  | 11<br>HILAGAVAT | 92  | 20  | 80 | 86 |

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| 21 | 912617103005 | MONIKA K         | IV/CIVIL | 11 | 92  | 21  | 84 | 88 |
|----|--------------|------------------|----------|----|-----|-----|----|----|
| 22 | 912617103006 | MUTHUMEENA P     | IV/CIVIL | 12 | 100 | .22 | 88 | 94 |
| 23 | 912617103007 | POTHUMPEN A      | IV/CIVIL | 11 | 92  | 20  | 80 | 86 |
| 24 | 912617103008 | PRIYADHARSHINI S | IV/CIVIL | 10 | 83  | 19  | 76 | 80 |
| 25 | 912617103009 | RAJESWARI J      | IV/CIVIL | 12 | 100 | 23  | 92 | 96 |
| 26 | 912617103010 | SIVAPRIYA S      | IV/CIVIL | 11 | 92  | 20  | 80 | 86 |
| 27 | 912617103701 | LAKSHMI A        | IV/CIVIL | 12 | 100 | 21  | 84 | 92 |

= P.2 VAC Coordinator

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