



NPTEL Online Certification Course

Indian Institute of Technology Roorkee

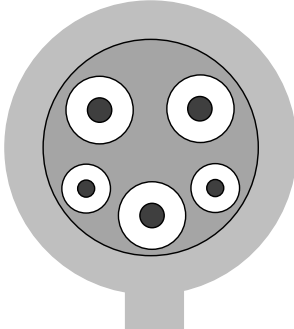
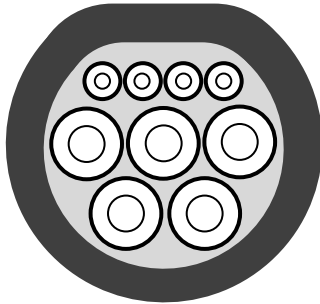
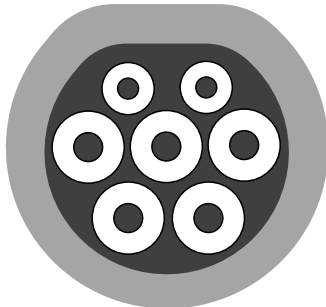
Course Name: Charging Infrastructure

Instructor: Prof. Apurv Kumar Yadav



WEEK 1: ASSIGNMENT 1

1. For the table below

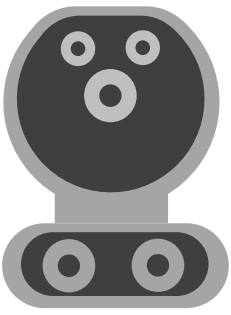
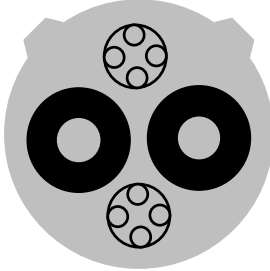
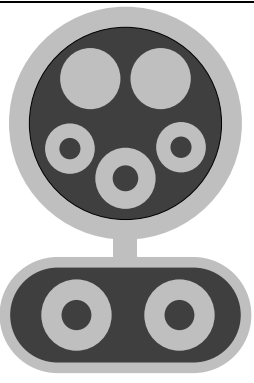
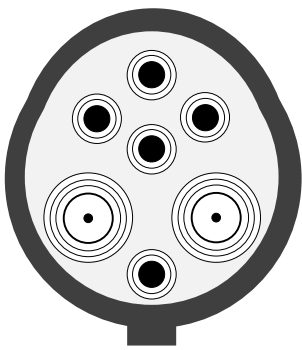
Name	Charger Plug
I. AC Type-1	a. 
II. AC Type-2	b. 
III. Type-7	c. 

What will be the correct identification of the charger plugs

- A. I-a, II-b, III-c
- B. I-b, II-c, III-a
- C. I-c, II-a, III-b
- D. I-a, II-c, III-b

Answer: D

2. For the table below

Name	Charger Plug
I. CHAdeMO	a. 
II. CCS 1	b. 
III. CCS 2	c. 
IV. Type-6	d. 

What will be the correct identification of charger plugs

- A. I-a, II-b, III-c, IV-d
- B. I-b, II-c, III-a, IV-d
- C. I-c, II-a, III-d, IV-b
- D. I-d, II-a, III-c, IV-b

Answer: B

3. For the table below

Charging System	Communication Method
I. CHAdeMO	a. PLC
II. AC Type-2	b. CAN
III. CCS 2	c. PWM based communication

What will be the correct match for the charging system and its associated communication method

- A. I-a, II-c, III-b
- B. I-b, II-a, III-c
- C. I-b, II-c, III-a
- D. I-a, II-b, III-c

Answer: C

4. For the table below

Mode of Charging	Charging from
I. Mode-1	a. Dedicated DC EVSE
II. Mode-2	b. Dedicated AC EVSE
III. Mode-3	c. Home socket with protection
IV. Mode-4	d. Directly home socket

What will be the correct matching

- A. I-a, II-b, III-c, IV-d
- B. I-d, II-c, III-b, IV-a
- C. I-c, II-d, III-a, IV-b
- D. I-b, II-a, III-d, IV-c

Answer: B

5. Identify which of the following statements is/are True

- A. In DC charging system, the power conversion is taken place using on board charger
- B. In AC charging system, the power conversion is taken place using on board charger
- C. In AC charging system, the power conversion is taken place using off board charger
- D. In DC charging system, the power conversion is taken place using off board charger

Answer: B, D

6. What will be the average output voltage of single-phase half-bridge rectifier. If it is supplied from 230V, 50Hz supply. (Note: The answer should be rounded up to 2 decimal places; use $\pi = 3.14$).

Answer: 103.00 to 104.00

7. What will be the peak repetitive reverse voltage of diode in case of single-phase half-bridge rectifier. Note: $V_{s,pk}$ is the peak value of input AC voltage

- A. $V_{s,pk}$
- B. $\frac{V_{s,pk}}{2}$
- C. $\frac{V_{s,pk}}{\sqrt{2}}$
- D. $2 * V_{s,pk}$

Answer: A

8. The communication between EVSE and central management system in AC Type-2 charging system is taken place using following protocols

- A. ISO15118
- B. DIN SPEC 70121
- C. OCPP
- D. SAE J1772

Answer: C

Answer Key:

1. D	5. B, D
2. B	6. 103.00 to 104.00
3. C	7. A
4. B	8. C

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