HOLIDAY HOMEWORK 2017
Class X (GERMAN)

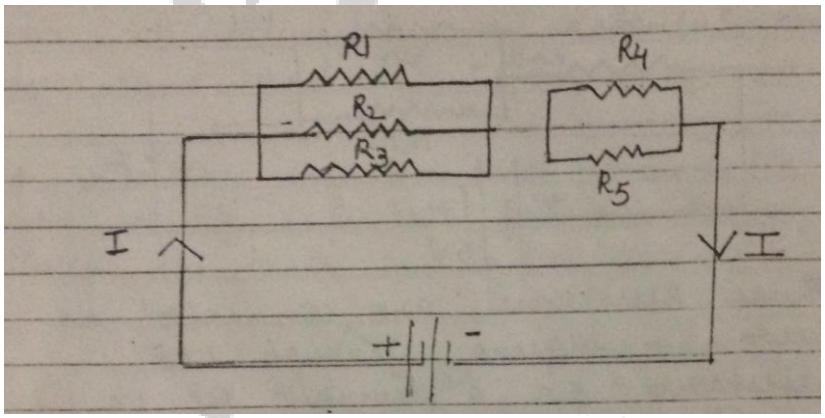
1. Select any two topics done in class which are your favourite. List down their application rules together with examples with pictures/ illustration. Conclude your research on the selected topic with an example exercise and its solution.
2. Do exercises given at Page No 30-37 Lehrbuch. (Page No. 64-69)
   (Schreibe-Teil on an A4 sheet) Rest in book only.
3. Prepare a PPT on anyone of the following topics:-
   - Famous Musician of Germany
   - Famous Scientists of Germany
   - Automobile companies
4. Write and learn 2 new words everyday with examples.

PHYSICS

1. a) Find the total resistance of the circuit shown by figure.

b) Also find the total current flowing in circuit [Ans. a) Total R = 5.8 Ω b) I = 2.07 A]

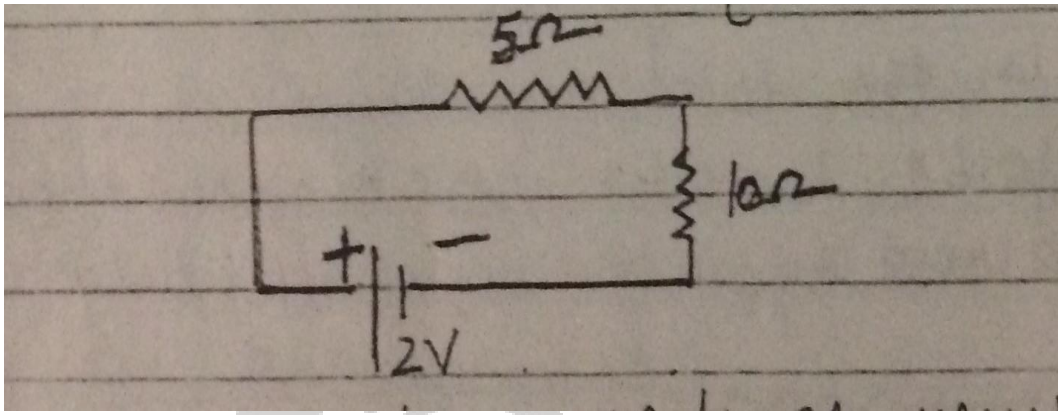
[Given R1 = 1Ω, R2= 2Ω, R3= 3Ω, R4= 5Ω, V= 12v]



2. Calculate i) Effective resistance [Ans. R= 15 Ω]

   ii) Current [Ans. I = 0.133 A]

   iii) Potential difference across 10 Ω resistor of a circuit shown in fig. [Ans. V= 1.33 volt]

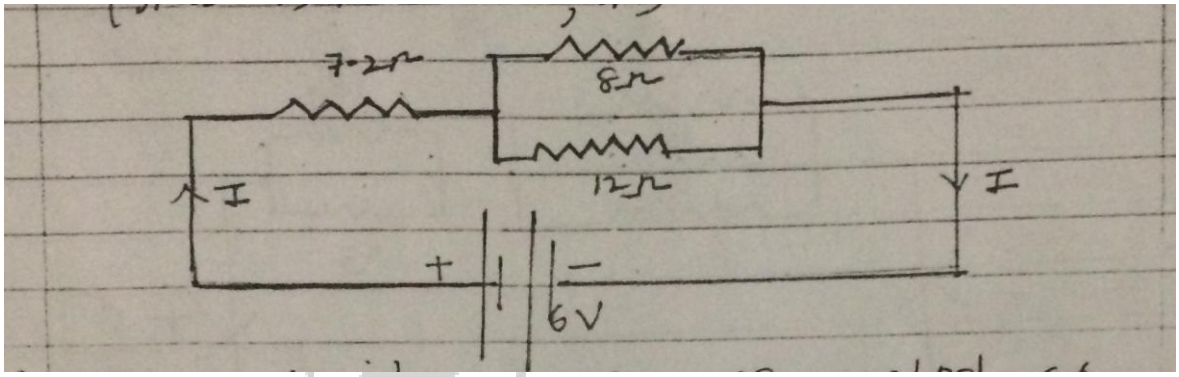


3. There are four coils of resistances 4Ω, 8Ω, 12Ω and 24Ω. What is
   i) The highest
   ii) The lowest resistance that can be obtained by the combination of these coils.

   [Ans. i) R= 48Ω ii) R= 2Ω

4. A copper wire having resistance R is cut into four equal parts.
   i) Find the resistance of each part in terms of original resistance of the wire. [Ans. R/4]
   ii) Find the resistance of the combination if these 3 parts are connected in parallel. [Ans. R/16]

5. In the circuit diagram given below. Find
   i) Total resistance of the circuit
   ii) Total current flowing in the circuit.
   iii) Potential difference across R1 [Ans. i) R= 12Ω, ii) I= 0.5A, iii) V1=3.6 v]



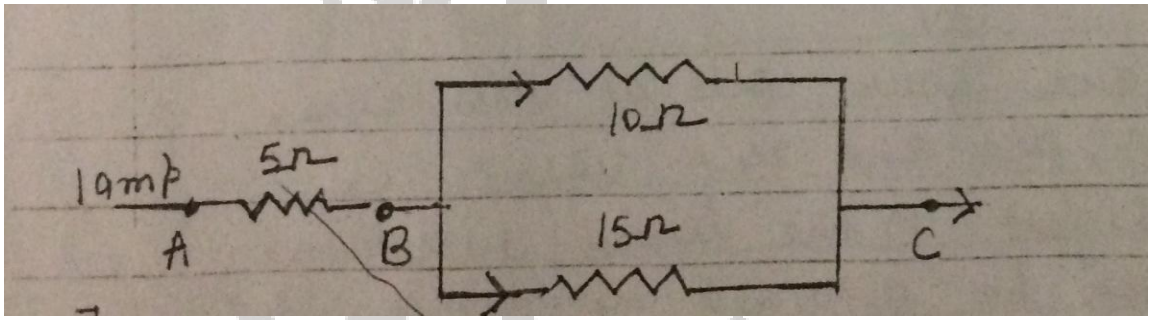
6. Three resistances are connected as shown in figure. Through the resistance 5Ω, a current of 1 ampere is flowing.

   i) What is the current through the other 2 resistors?

   ii) What is the potential difference across AB and across AC

   iii) What is the total resistance.

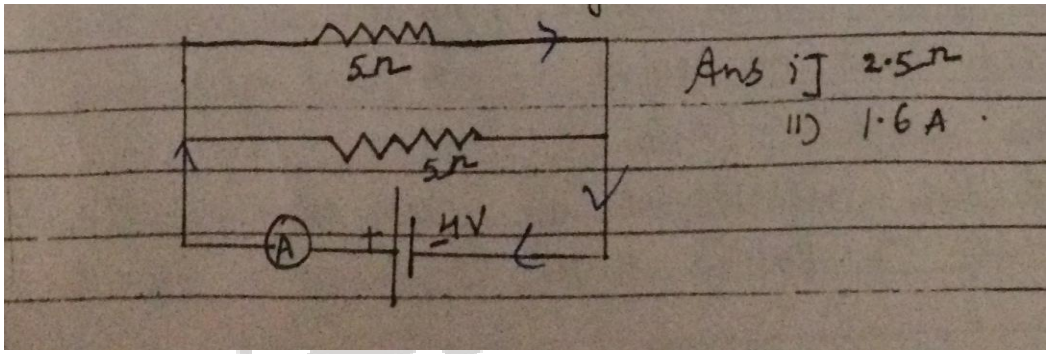
   [Ans. i) I1 = 0.6 A, I2= 0.4 A ii) P.D across AB= 5v P.D. across AC= 11v iii) R=11Ω



7. In the circuit diagram. Find

   i) Total resistance

   ii) Current shown by ammeter A

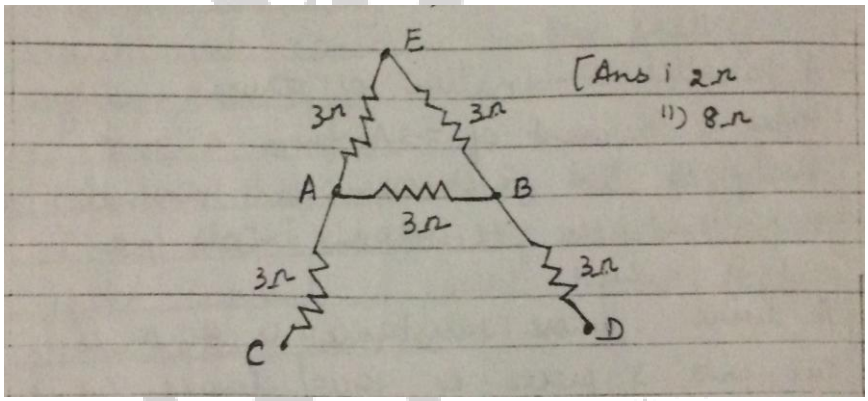


8. When two resistors of resistances R1 and R2 are connected in Parallel, the net resistance is 3Ω. When connected in series, its value is 16Ω. Calculate the values of R1 and R2. [Ans. R1= 4Ω, R2= 12Ω]

9. Five resistors, each 3Ω are connected as shown in Fig. Calculate the resistance between the points

   i) A and B

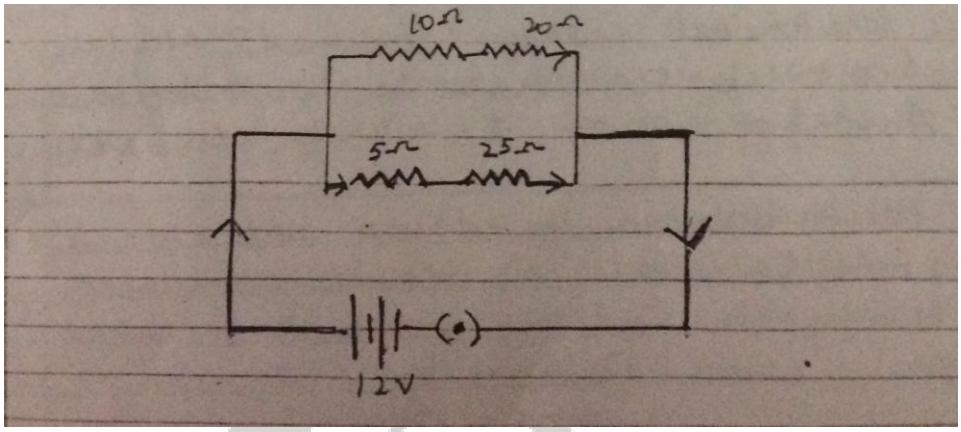
   ii) C and D



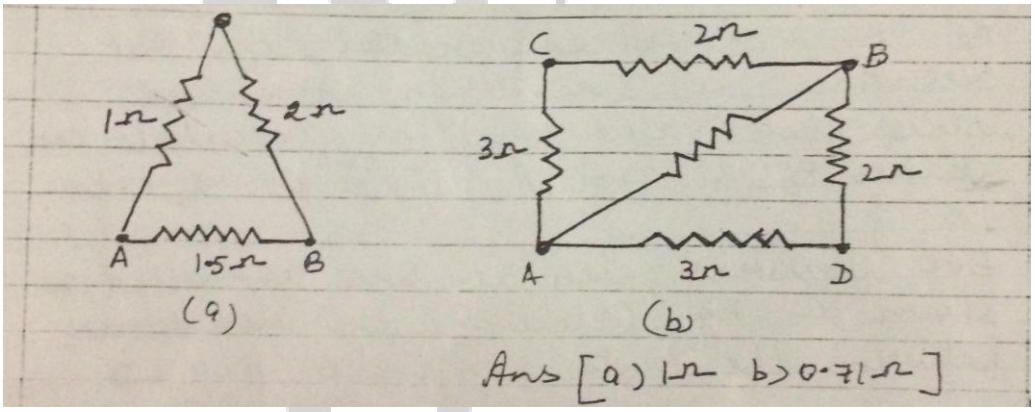
10. If a 12v battery is connected to the arrangement as shown in figure. Calculate

    i) The total effective resistance of the arrangement

    ii) The total current flowing in the circuit [Ans. i) 15Ω ii) 0.8A



11. Calculate the effective resistance between the points A & B in the networks shown in figure (a) and (b)



Ans [a) 1Ω b) 0.71Ω]

12. A parallel combination of three resistors takes a current of 7.5 A from a 30 v supply. If two resistors are 10 Ω and 12 Ω. Find the third one. [Ans. 15 Ω]

13. A wire whose resistance is 80 Ω is cut into 3 pieces of equal lengths which are then arranged in parallel. Calculate the resistance of the combination. [Ans. 8.88 Ω]

14. An electrc bulb is rated at 200v- 100w. What is its resistance? Five such bulbs burn for 4 hours what is the electrical energy consumed? Calculate the cost if the rate is 50 paise/unit. [Ans. R=400Ω, E=2 unit, cost=Re1]

15. A torch bulb is rated at 2.5 v and 750 mA. Calculate its i) Power ii) Resistance iii) Energy consumed if the bulb is lighted for 4 hours. [Ans. i) 1.875 w ii) R= 3.33 Ω iii) E= 27000 I]

16. Two coils of resistances 3Ω and 6Ω are connected in series across a battery of emf 12v. Find the electrical energy consumed in 1 minute in each resistance when these are connected in series. [Ans. 640 J]

17. Two bulbs A and B are rated 100w-120v and 10w-120v respectively. They are connected across a 120v source in series.Which will consume more energy. [Ans. Bulb B]

18. Calculate the amount of heat produced in an electric heater of resistance 100 Ω if 6A current is passed through it for 10 minutes. [Ans. 2.16×10^7]

19. An electric heater is rated at 1500 w. Calculate the heat produced per hour. [Ans. 5.4×10^6]

20. Calculate the power of a source if it produces an energy of 750 J in 30 seconds. [Ans. 25 w]

21. Calculate the time taken by 100 w bulb to consume 3000 J of energy. [Ans. 30 sec]

22. An electric bulb of resistance 80Ω is connected to the main supply of 220 v. Find the power of the current. [Ans. 650 w]

23. Two lamps, one rated 100 w at 220 v and other 40 w at 220 v are connected parallel to 220 v mains supply. Calculate the current drawn from the supply line. [Ans. 0.63 A]

24. A household has a 100 w lamp lighted for 2 hours, two 60 w lamps lighted for 4 hours and an electric fan of 50 w working for 8 hours every day. Calculate the electric units consumed each day. [Ans. 1.08 units]

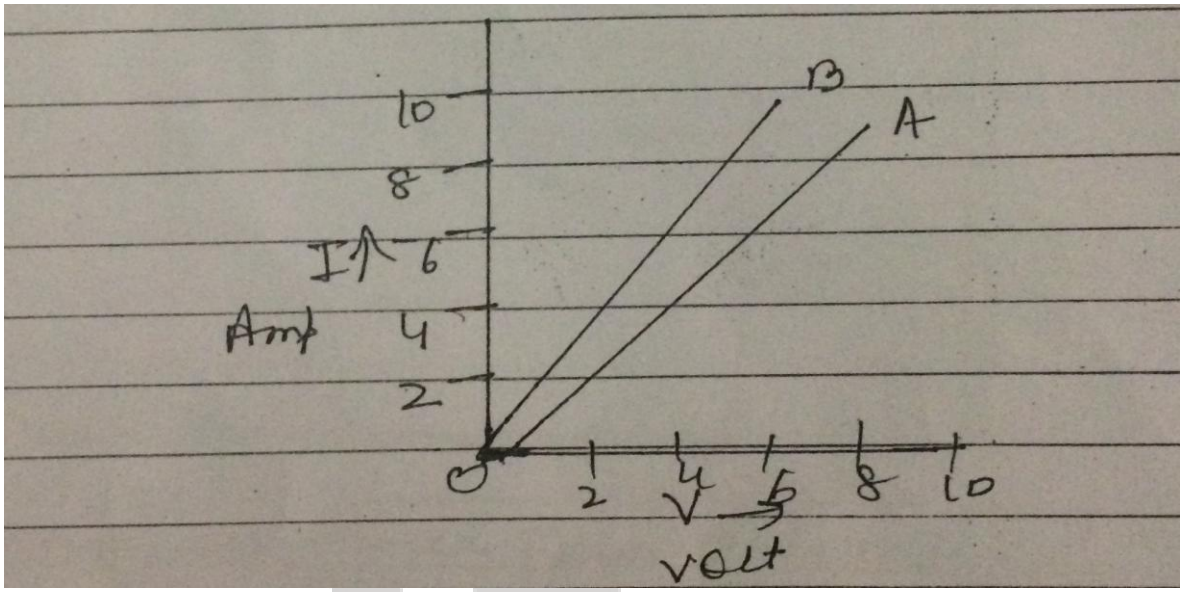
25. In a factory, an electric bulb of 500 w is used for 2 hours and an electric motor of 0.5 horse power is used for 5 hours every day. Calculate the cost of using the bulb and motor for 30 days. If the cost of electric energy is 3 Rs. Per unit. [Ans. 257.85]

26. Which one has less resistance a 60 w bulb or a 40 w bulb. Give reason.

27. Two resistances when connected in parallel give resultant value of 2Ω. When connected in series the value becomes 9Ω. Calculate the value of each resistance?

28. A wire of resistance 5Ω is bent in the form of a closed circle. What is the effective resistance between the two points at the ends of any diameter of the circle?

29. Graphs between electric current and potential difference across two conductors A and B are plotted as shown in the figure. Which of the two conductors has more resistance? Give reason



30. Why an ammeter is likely to burn out if it is connected in parallel?

31. n resistors each of resistance R are first connected in series and then in parallel. What is the ratio of the total effective resistance of the circuit in series combination and parallel combination?

32. A wire of uniform area of cross section is stretched to four times its original length. By what factor does resistivity change?

33. Calculate the power of a source if it produces an energy of 750 J in 30 seconds. [Ans. 25w]

Revise Electricity and its effects for Test in July.

HINDI

कक्षा - 10

1. महादेवी वर्मा द्वारा रचित 'पथ के साथी' कहानी संकलन पढ़ने के पश्चात किन्हीं पाँच कहानियों के मुख्य पात्रों के नाम व कहानी का सार अपनी पुस्तिका में लिखें।
2. प्रतिदिन हिन्दी समाचार - पत्र पढ़ें।
3. महादेवी वर्मा की अन्य प्रमुख रचनाओं के नाम की सूची बनाइए। (केवल नाम)

BIOLOGY
HOLIDAY HOME WORK
CLASS X

1. Name the respiratory pigment. What is its role?
2. Why is ATP considered to be energy currency for most cellular processes?
3. What causes dental caries?
4. Liver & pancreas are accessory digestive glands, yet essential for the process. Comment.
5. Adults complain of 'acidity' many times. What is it?
6. How are desert plants adapted for photosynthesis?
7. Amongst all plant parts, leaves are best suited to perform photosynthesis. How?
8. Why is double circulation necessary for warm-blooded animals?
9. Why do veins have valves whereas arteries do not?
10. Prepare your project for Science Day.
11. Complete your Bio files. Write all four experiments.

CHEMISTRY

1. Complete the following:
   a) $Zn + FeSO_4 \Longrightarrow$
   b) $Mg + CuSO_4 \Longrightarrow$
   c) $Cu + AgNO_3 \Longrightarrow$
   d) $Fe + Al_2(SO_4)_3 \Longrightarrow$
2. Write the physical state symbol for (a) Precipitate (b) Substance present as solution in water
3. Translate the following into chemical equations and balance them
   (a) Calcium Carbonate + Hydrochloric acid $\Longrightarrow$ Calcium Chloride + Water + Carbondioxide
   (b) Sodium Carbonate + Sulphuric acid $\Longrightarrow$ Sodium Sulphate + Water+ Carbondioxide
4. In the electrolytic decomposition of water, name the gases obtained at the two electrodes and describe a test that can be carried out to identify them.
5. Why should silver bromide be stored in dark coloured bottles?
6. Solution X turns pink when phenolphthalein is added to it, what can be its pH range?
7. Which test can be carried out for the gas evolved when magnesium metal reacts with dilute hydrochloric acid?