

KANNUR JILLA PANCHAYATH

DIET KANNUR

MUKULAM MODEL EXAMINATION -2018

PHYSICS

STD X

Time: 1½ hrs

Total Score: 40

Answer any FOUR question from 1 to 5. Each question carries 1 score

1. In which name the booming effect of sound due to multiple reflection is known ?
(echo, resonance , reverberation, forced vibration)
2. Newton's colour disk appear white when rotated fast. Which peculiarity of human eye is responsible for this?
3. Identify the relation in first pair and fill the blank.
Specific heat capacity: J/kgK
Latent heat of fusion:.....
4. Identify the odd one out and write the reason.
(Peat, lignite, bitumen, bituminous coal)
5. Among the following , find the energy source that comes under green energy category.
 - nuclear energy
 - solar energy
 - petroleum
 - coal

Answer any FOUR questions from 6 to 10. Each question carries 2 score each.

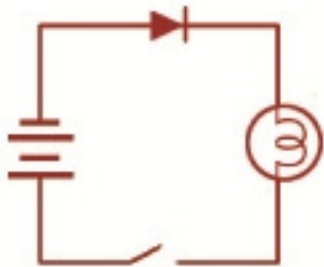
6. The different stages of working of a moving coil microphone is given below. Arrange them in proper order.
 - *voice coil vibrates
 - *sound waves falls on the diaphragm
 - *electric signals produces in voice coil
 - *diaphragm vibrates.
7. A tuning fork is excited and it's stem is kept on the top surface of a table.
 - a) If the table vibrates, in which name the vibration is known ?

b) Write down the situation when these two become in resonance.

8. Classify the given statements according to incandescent lamp and discharge lamp

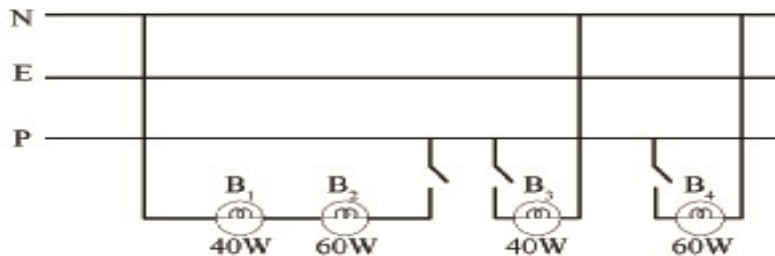
- * glows in different colours according to the nature of gas filled
- * tungsten is used to make filament
- * the major part of electric energy is converted to heat
- * ions and atoms collide with each other.

9. Observe the circuit and answer the following



If the switch is 'ON' say whether the bulb will glow or not? Justify your answer.

10. Observe the house hold circuit drawn by a boy



- a) Identify the bulbs which get same potential difference ?
- b) Write down any two advantage of connecting electrical devices in parallel.

Answer any FOUR from 11 to 15. Each question carries 3 score.

11. Find suitable term for the following statements from the box.

Rotor, Single phase AC, stator, three phase AC, exciter

- a) The rotating part of power generator
- b) The auxiliary generator of power generator
- c) The nature of electricity produced in power stations

12. The colour of an opaque object depends upon the colour that it reflects.

- a) In which way the plane appear, if it reflect all colours ?
- b) Write down, whether the blue letters written on white paper will be clearly read in blue light? Justify your answer.


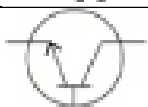
13. CNG is used in place of petrol and diesel as fuel .

- a) write down the full form of CNG.
- b) Write any two advantages of using CNG.

14. Liquid A at 30 °C is mixed with liquid B at 80 °C and A get a heat of 24000J.(assume that heat will not escape to surroundings.

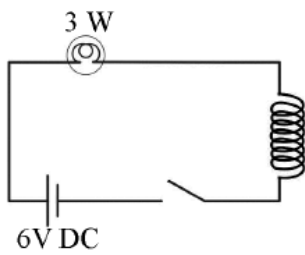
- a) What is the quantity of heat lost by the liquid B?
- b) Write down the statement of the principle , behind your finding.

15. Fill the blanks in the given box.

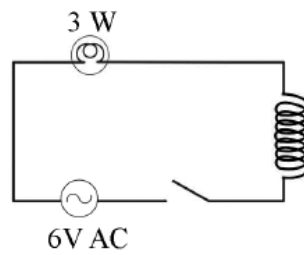
Name of electronic component	Symbol	Use
Inductora.....	Resist changes in electric current of a circuit.
Capacitor	b.....
.....c.....		Increase the strength of electric signals

Answer any FOUR from 16 to 20. Each question carries 4 score.

16. Answer the following questions by observing the circuits.



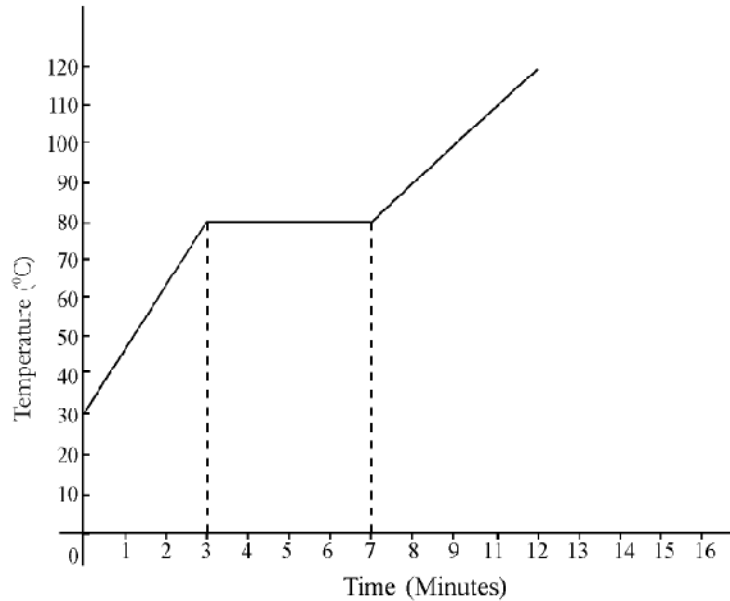
Circuit (i)



Circuit (ii)

- If switches are 'ON' in which circuit the brightness of bulb will be less.
- If identical soft iron core is introduced in both coils what will be the observation. Explain your answer.

17. The time- temperature graph obtained while heating 5kg of a solid substance of specific heat capacity 500J/kgK is depicted . Analyse the graph and answer the following questions.

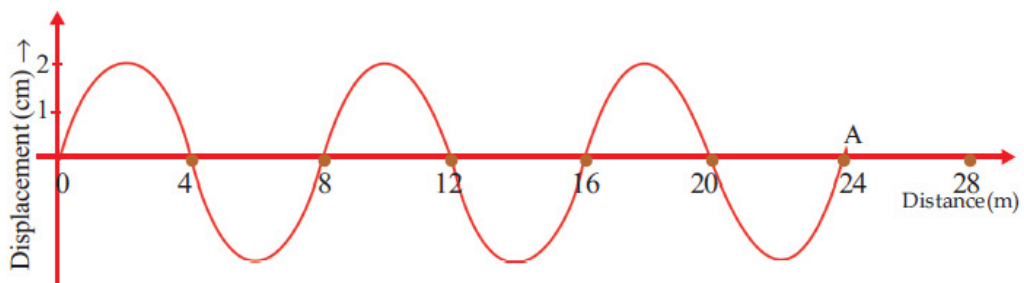


- Find the melting point of the substance.
- Heat energy is absorbed during 3 to 7 minutes. But temperature remain the same . why?
- Calculate the quantity of heat absorbed by the substance, up to the first 3 minutes.

18. Rainbow is formed by the dispersion happened in rain drops ,

- Which colour is seen on the outer edge of a rainbow?
- Draw the diagram that shows the dispersion of sun light happening through a water drop.
- Write names of any two phenomenon other than dispersion , that happens for a light ray during this process.

19. Graphic representation of a wave motion is depicted . Answer the following questions.



- a) What is the amplitude of the wave?
- b) How much is the wave length ?
- c) If the wave took 0.25 s to reach at the point A, calculate the frequency of the wave.

20. Heat energy is generated in the heating coil of an electric device , when electricity is passed through it

- a) Which material is used to make the heating coil ?
- b) An electric device is marked 230V, 1000W . Calculate the resistance of the heating coil .
- c) Calculate the heat energy produced if this device works for 10 minutes.
- d) If voltage is reduced to 115V, what will be the power?

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