Telecommunications revision questions

The credit questions are in ------- ***bold and italics***

1. Give 2 examples of situations that prove that light travels faster than sound?
2. What 2 things have to be measured to find the speed of an object?
3. What equipment would you use to measure these?
4. What units are used to measure these?
5. Write down the equation that allows us to calculate the speed of an object.
6. What is the approximate speed of sound through air?
7. What equipment would you use to find the speed of sound through air in a physics laboratory.
8. If a sound travels 165 metres in 0.51 seconds what was the speed of sound?
9. Give approximate values for the speed of sound through a solid and liquid?
10. What does wavelength mean and what is its unit?
11. What does frequency mean and what is its unit?
12. What does amplitude mean and what is its unit?
13. What does speed mean and what is its unit?
14. Twenty water waves go past a point in 4 seconds what is the frequency of the waves?
15. What is the symbol used for frequency?
16. What is the symbol used for wavelength?
17. What is the equation that links speed, frequency and wavelength?
18. The speed of a wave is 10m/s and its frequency is 25Hz what is the wavelength of the wave?
19. ***Explain why distance divided by time is the same as frequency multiplied by wavelength.***
20. Name two things that telecommunications signals can be sent through?
21. What is the speed of a signal through an electrical cable?
22. What are fibre optic cables made out of?
23. What carries the signal through a fibre optic cable?
24. What is the speed of a signal through a fibre optic cable?
25. Give 4 advantages of using fibre optic cables?
26. What happens to light when it hits a mirror?
27. ***What is meant by reversibility of light?***
28. What can be stated about an incident ray and a reflected ray?
29. ***What enables light to pass along an optical fibre from one end to the other?***
30. How long will it take a signal to pass along a fibre optic cable from Britain to America distance of 4000km if it travels at 2×10^8 m/s?

31. What are the main parts of a radio receiver?
32. What does each part do?
33. ***What is meant by an amplitude modulated wave?***
34. What are the main parts of a T.V. receiver?
35. What does each part do?
36. How many lines make up one picture on T.V. screen?
37. How many images does a T.V. make in one second?
38. ***How T.V. picture made brighter?***
39. ***What is meant by image retention?***
40. ***What is meant by line build up***
41. What is it that makes the beam of electron s move across the screen?
42. How many colours of paint are on the screen of a colour T.V.?
43. What is the job of the shadow mask
44. ***How is yellow made on a colour T.V. screen?***
45. ***How is cyan made on a colour T.V. screen?***
46. ***How is magenta made on a colour T.V. screen?***
47. How is white made on T.V. screen?
48. How is black made on a T.V. screen?
49. How can the shade of colour be changed?
50. Name 3 examples of long range telecommunications systems that don't use wires.
51. What do waves such as microwaves, T.V. and radio signals and all other types of waves transmit.
52. What speed do microwaves, T.V. and radio signals move at?
53. What is it that identifies a particular radio or T.V. station?
54. ***If a radio signal takes 0.24 second to go between transmitter and receiver, how far apart are they?***
55. ***What is the frequency of a radio signal of wavelength 247m?***
56. ***How do short wave radio signals travel from one side of the earth the other?***
57. ***Why are microwaves used to communicate with satellites?***
58. ***What does diffraction mean?***
59. ***Why do some signals diffract better than others?***
60. Why are curved reflectors fitted to some receiver aerials?
61. How do curved reflectors do this?
62. Give some examples of telecommunications systems that use curved reflectors.
63. ***Why are curved reflectors used with some transmitting aerials?***
64. What happens to the period of orbit of a satellite as it moves to a greater height?
65. Where will a geostationary satellite always be?
66. Describe how geostationary satellites send T.V. signals around the world you must mention dish aerials on the transmitter and receiver and the ground station?