



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

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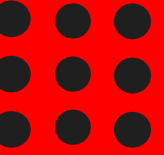
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME : 19EE605 – PROTECTION & SWITCH GEAR

III YEAR /VI SEMESTER EEE

Unit 1 – Protection Schemes

Topic-Nature & Causes of faults





INTRODUCTION TO FAULT

Faults are caused either by insulation failures or by conducting path failures. The failure of insulation results in short circuits which are very harmful as they may damage some equipment of the power system.





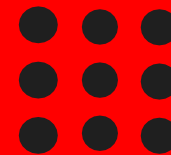
CAUSES OF FAULT

Most of the faults on transmission and distribution lines are caused by overvoltage due to lightning or switching surges, or by external conducting objects falling on overhead lines.





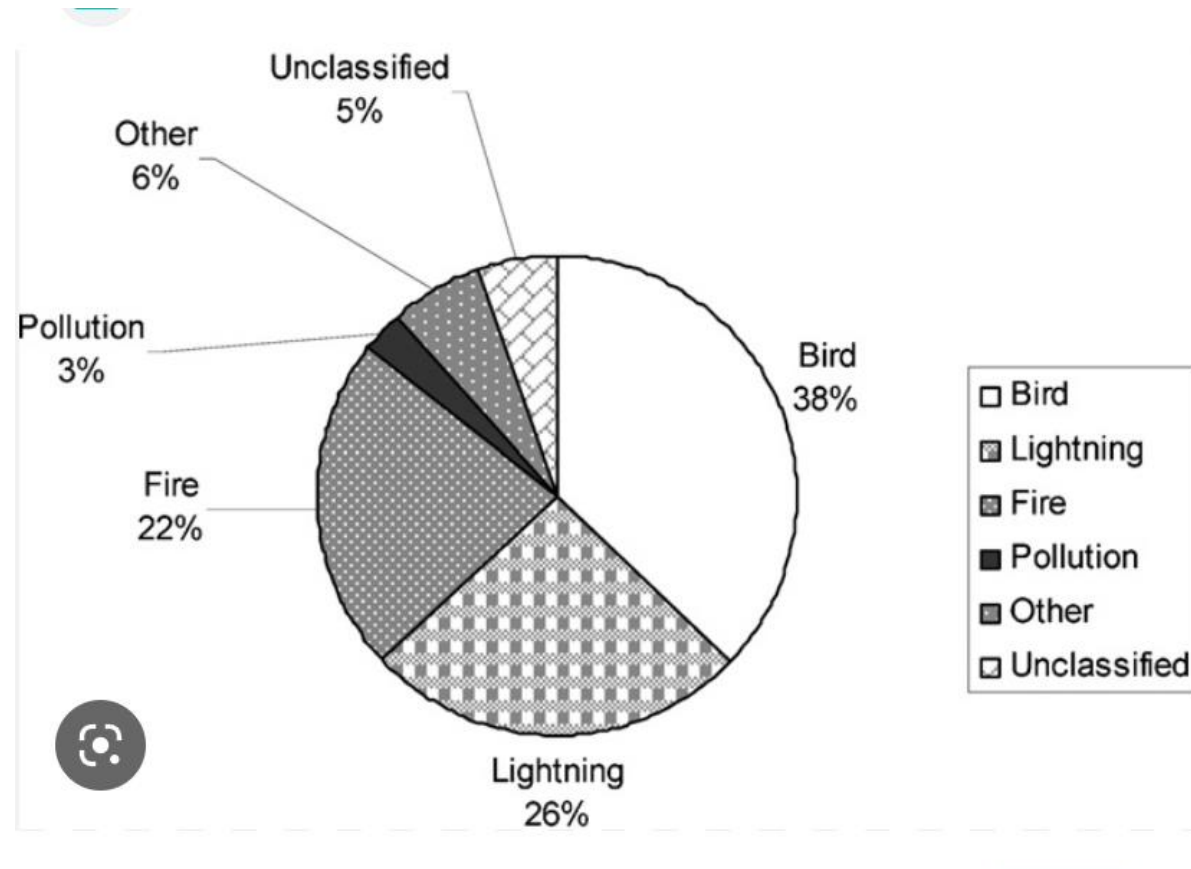
OTHER CAUSES OF FAULT





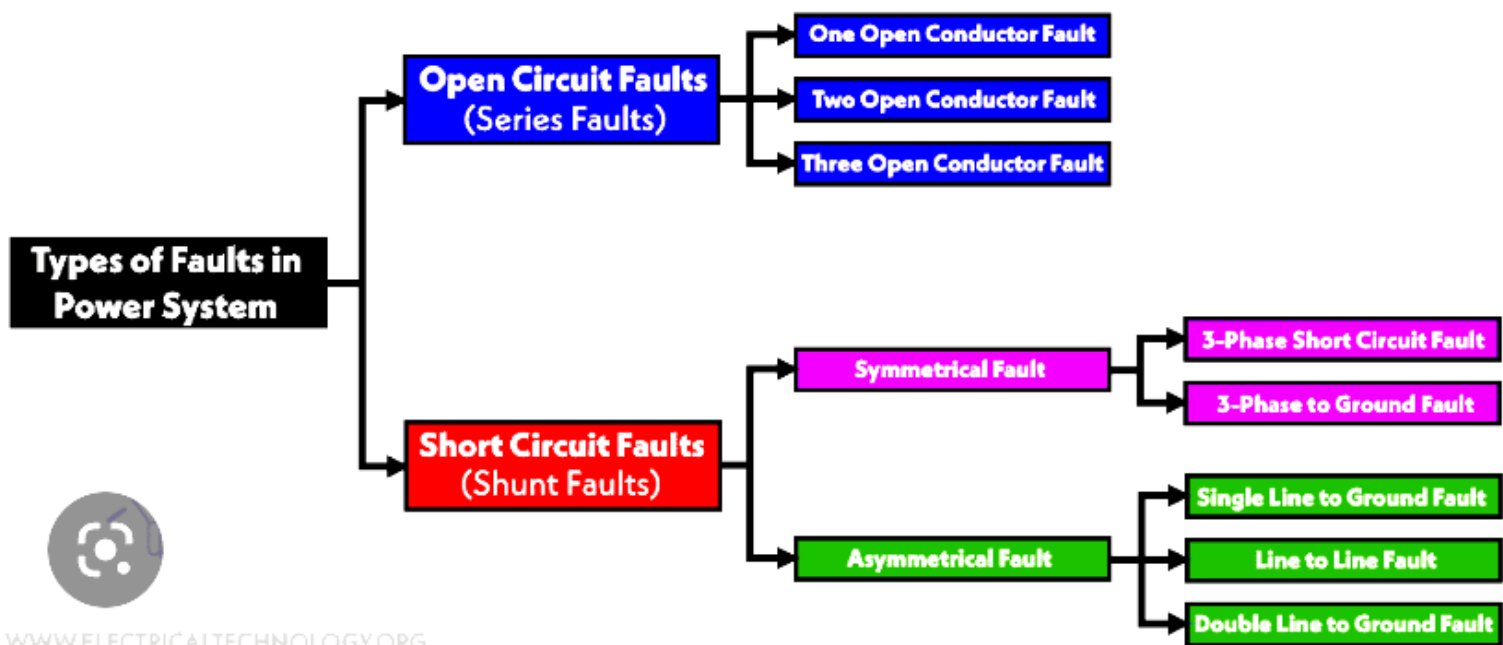
FAULT STATISTICS

Equipments	% of total faults
O H line	50
Cables	10
Switchgear	15
Transformer	12
CTs & PTs	2
Control Equipment	3
Miscellaneous	8

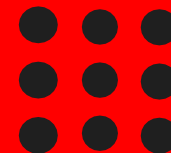




TYPES OF FAULTS

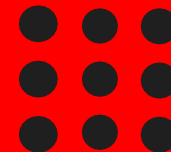



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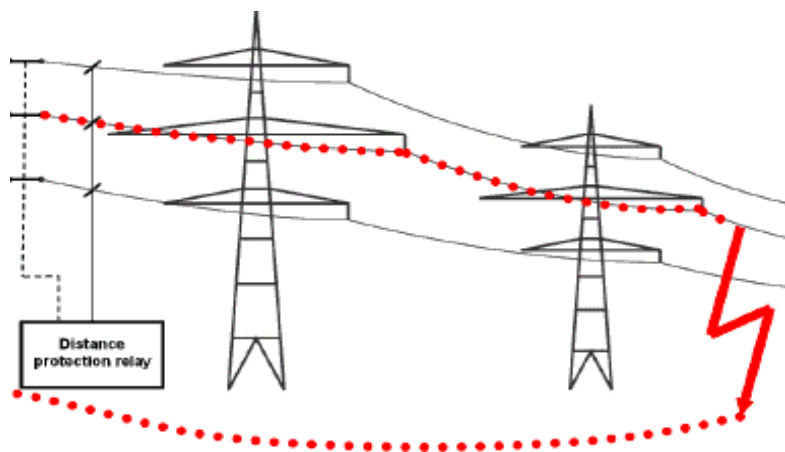




ASSESSMENT 1



Mention the fault shown in the picture



- a) Line to Line
- (b) Line to Ground
- (c) Line to Line to Ground
- (d) Ground to Ground





REFERENCES

1. Badri Ram , Vishwakarma, B.H., “Power System Protection and Switchgear”, New Age International Pvt Ltd Publishers, 2 nd Edition 2017.
2. Ravindranath, B., Chander, M., “Power system Protection and Switch gear”, 2nd Edition, New Age International, 2016
3. Soni M.L., Gupta P.V., Bhatnagar U.S., Chakrabarthi A., “A Text Book on Power System Engineering”, Dhanpat Rai & Sons Company Private Limited, New Delhi, 2008
4. Sunil S.Rao, “Switchgear, Protection and Power System (Theory, Practice & Solved Problems)”, Khanna publishers, New Delhi, 2019.
5. Paithankar, Y.G., Bhide, S.R., “Fundamentals of Power System Protection”, Prentice Hall of India Pvt. Ltd., New Delhi, 2nd Edition, 2014.

THANK YOU