



FIRST INTERNAL ASSESSMENT

Sem: VIIth
Date: 10/09/2018

Subject: Power System Protection
Time: 3PM to 4PM

Sub. Code: 15EE72
Max. Marks: 25

Note: Answer two full questions..

Q.No	Description of Questions	Marks	CO	RBT Level
1	a With neat sketch explain the operation of HRC fuse.	7	402.1	L ₁ ,L ₂
	b Explain various types of Fuses.	6	402.1	L ₁ ,L ₂
OR				
2	a Explain the different characteristics of HRC fuse	7	402.1	L ₁ ,L ₂
	b Explain the occurrence of Lightning phenomena.	6	402.1	L ₁ ,L ₂
3	a With neat sketch Describe the operation of Expulsion type of surge arrester.	6	402.1	L ₁ ,L ₂₃
	b Explain about Klydonograph & Magnetic link.	6	402.1	L ₁ ,L ₂
OR				
4	a Write a note on Insulation Coordination and Basic impulse Insulation level.	6	402.1	L ₁ ,L ₂
	b Mention various advantages and disadvantages of Gas Insulated Substation.	6	402.1	L ₁ ,L ₂

Course Coordinator
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Module Coordinator
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IA Scheme

2018-19 (Odd)

SCHEME OF EVALUATION IA - Ist

Page No : 01/04

SEM: 7 th	SUBJECT: power System protection	SUBJECT CODE: 15EE72	DATE: 15/09/18	
Q.No.	Bits	DESCRIPTION	Marks	CO's
1	a	Neat sketch of HRC fuse & definition of HRC fuse construction & operation of HRC fuse	02 04	402.1
	b.	Explanation for various types of fuses	06	402.1
2	a	Explanation for different characteristics ^{OR} of HRC fuse	07	402.1
	b.	Explanation for occurrence of lightning phenomena	06	402.1
3	a.	neat sketch of Expulsion type of LA & operation of Surge arrester	02 04	402.1
	b.	Explanation for klydonograph & magnetic link	06	402.1
4.	a	Explanation for Insulation co-ordination & Basic Impulse insulation level	06	402.1
	b.	advantages and disadvantages of GY insulated Substation	06	402.1

Course Coordinator

Module Coordinator

HOD 20.9.18



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SCHEME OF EVALUATION IA - Ist

Page No : 02/04

SEM: 7 th	SUBJECT: power system protection	SUBJECT CODE: 15FE72	DATE: 15/09/18	
Q.No.	Bits	DESCRIPTION	Marks	CO's
1	a	<p>HRC fuse is a high rupturing capacity cartridge type of fuse, which is used for distribution purpose.</p> <p>Labels in diagram: outer element, fuse element, fuse tube, cartridge contact, filling powder, brass end cap.</p>	03	402.1
		<p>Explanation for construction & operation of fuse</p>	04	402.1
	b	<p>Explanation for various types of fuses</p> <p>① expulsion fuse ② Rewirable fuse ③ cartridge fuse ④ drop out fuse ⑤ liquid fuse ⑥ open fuse ⑦ striker fuse ⑧ switch fuse ⑨ HRC fuse.</p>	06	402.1
2	a	<p><u>OR</u></p> <p>Explanation for various characteristics of HRC fuse -</p> <p>① cut-off characteristics. ② time-current characteristics. ③ I^2t characteristics.</p> <p>Labels in graph: prospective cn, Arc finishes, peak arc voltage, recovery, voltage, fault cn, clearing time, time to fall operating.</p>		



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SCHEME OF EVALUATION IA - I 3d

Page No : 03/04

SEM: 7th	SUBJECT: power system protection	SUBJECT CODE: 15EE72	DATE: 15/09/18
Q.No.	Bits	DESCRIPTION	Marks

* time-current characteristics.

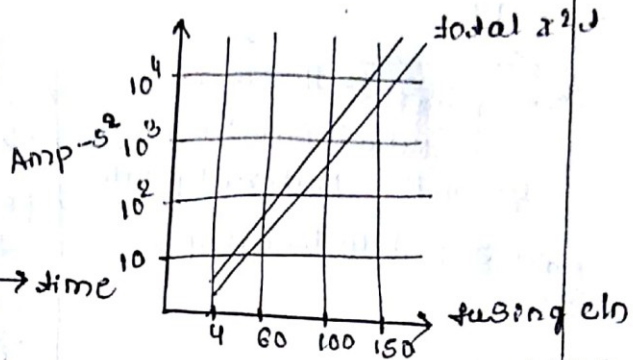
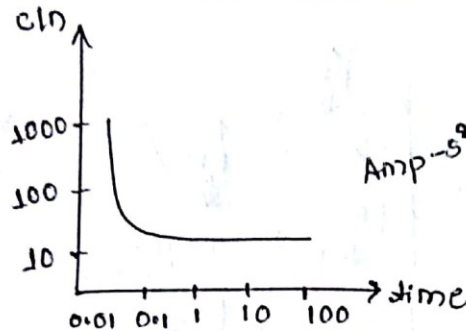


fig - I²t characteristics

3 a operation of Expulsion type surge arrester 06 402.1

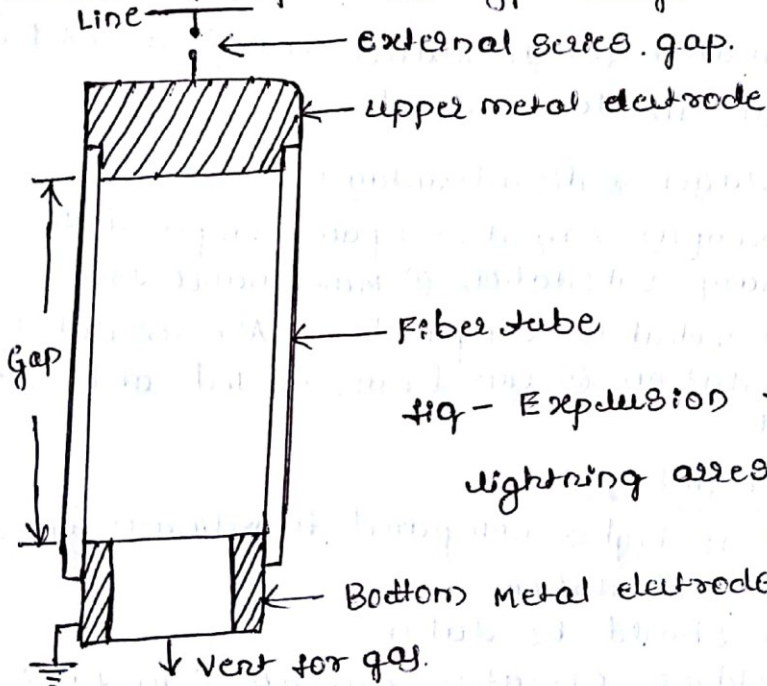


fig - Expulsion type lightning arrester

b Klydonograph - is an instrument used for the measurement of surge voltage on to-line caused due to lightning. & Magnetic link is an instrument used for the measurement of surge cA



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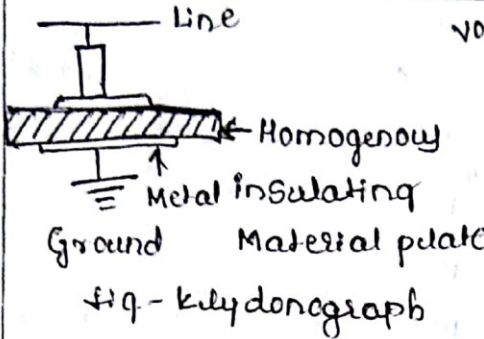
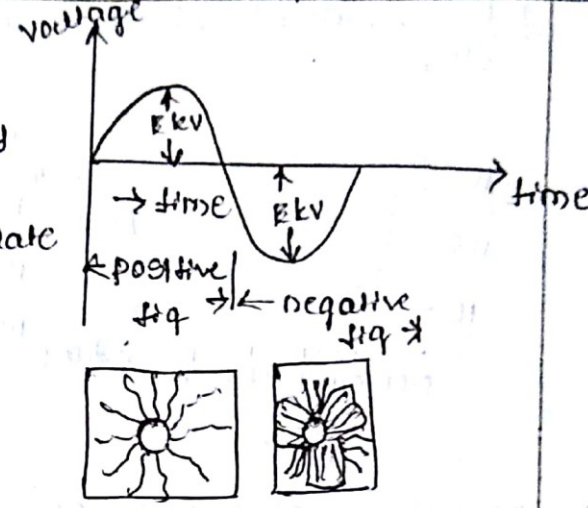
Exam

IA Scheme

2018-19 (Odd)

SCHEME OF EVALUATION IA -

Page No : 04 / 04

SEM: 7 th	SUBJECT: power system protection	SUBJECT CODE: 15FE72	DATE: 15/09/18		
Q.No.	Bits	DESCRIPTION	Marks	CO's	
		 			
4	a	Explanation for Insulation co-ordination & Basic impulse insulation level	06	402.4	
	b	advantages & disadvantages of GIS ① It occupies very less space compared to ordinary substation ② Maintenance free ③ Most reliable compared to Air insulated substation ④ can be assembled at the spot & modules. <u>*disadvantages.</u> ① cost is higher compared to ordinary conventional substation ② care should be taken ③ switching operation generate very fast transient over voltages. ④ Field non uniformity reduce withstanding level of GIS ⑤ SF6 gas pressure to be monitored in each compartment, reduction in SF6 gas pressure result in loss of	06	402.1	