

Class: B.Sc IIIrd Year

Semester: VI

Paper Name: Industrial Fermentation, Food Microbiology and Metabolism

Topic	URL
I-Fermentation in General.	
Definition and scope of Industrial microbiology and biotechnology	https://www.youtube.com/watch?v=V0BzQQCCwgo
Important classes of industrial microorganisms	https://www.youtube.com/watch?v=949R9zSKibM
Fermentation :- Definition and types (batch and continuous, aerobic and anaerobic, surface and submerged fermentations)	https://www.youtube.com/watch?v=CG6Qba1wYX8
Production strains	https://www.youtube.com/watch?v=eXEpiarmYkY
Screening :- Definition, Primary screening (crowded plate technique, auxonography, enrichment culture technique, use of indicator dyes), secondary screening.	https://www.youtube.com/watch?v=vM1sN9dfayA
Scale up process :- Definition and significance.	https://www.youtube.com/watch?v=U1G8FJrtBh8
Inoculum buildup : Spore and vegetative inoculum.	https://www.youtube.com/watch?v=9kSGIP9OtaE
General layout of fermentation plant :- Fermentation equipment and its uses	https://www.youtube.com/watch?v=PJF2BSmbFbM
Raw materials :- Composition and uses. Saccharine,	https://www.youtube.com/watch?v=guGuCofWgu4
Starchy	https://www.youtube.com/watch?v=xsYExiuzUpA
Cellulose raw materials	https://www.youtube.com/watch?v=XQnJnGWt3Eo
Hydrocarbon	https://www.youtube.com/watch?v=eGYcZ2UyHMc
Vegetable oils	https://www.youtube.com/watch?v=6Wn-kD5YzqA
Nitrogenous material (corn steep liquor).	https://www.youtube.com/watch?v=_S36CkzyXg
Antifoam agents	https://www.youtube.com/watch?v=Yo-M1uiklzs
Sterilization of media :- Batch and continuous sterilization.	https://www.youtube.com/watch?v=gApU4gt-TTI
Detection and assay of fermentation products	https://www.youtube.com/watch?v=Y6_2vwRTvhQ
II- Industrial Productions I:	
Ethyl-alcohol : From molasses	https://www.youtube.com/watch?v=Q1qsrQOt22I
Ethyl-alcohol : From waste sulphite liquor	https://www.youtube.com/watch?v=HNOcQKwW5ks

Beer	https://www.youtube.com/watch?v=HnI8qGOhKf4
Wine	https://www.youtube.com/watch?v=NLQWzdSpDbc
Acetone- Butanol from corn.	https://www.youtube.com/watch?v=J3XvjZcXKes
Citric acid	https://www.youtube.com/watch?v=6kOHou2OjBE
Vinegar- Fring's process	https://www.youtube.com/watch?v=GKwx79EdoE8
III-Industrial Productions II:	
Baker 's yeast : From molasses	https://www.youtube.com/watch?v=s_j0tGe9AdY
Single cell protein : From bacteria	https://www.youtube.com/watch?v=B4zEWu9JlXk
Penicillin	https://www.youtube.com/watch?v=uOWS6q9HQGk
Amylase : Bacterial	https://www.youtube.com/watch?v=RgiSBx7lqsl
Amylase : fungal	https://www.youtube.com/watch?v=3m64Xfwb9AY
Vitamin B12	https://www.youtube.com/watch?v=scvCIPsviLY
IV- Microbiology of Milk	
Composition and types of milk.	https://www.youtube.com/watch?v=iqKecKwMhY4
Sources of microorganisms in Milk.	https://www.youtube.com/watch?v=GdmuVMR_VO4
Types of microorganisms in milk.	https://www.youtube.com/watch?v=dW7rPrGH7vY
Pasteurization of milk : LHT, HTST, UHT.	https://www.youtube.com/watch?v=7OL42oUOR6I
Phosphatase test	https://www.youtube.com/watch?v=fSKYi6webri
Grades of milk.	https://www.youtube.com/watch?v=iqKecKwMhY4
Concentrated milk and milk powder.	https://www.youtube.com/watch?v=2Z0WzhEV91Q
Butter Production	https://www.youtube.com/watch?v=mDTQI_VVHDM
Cheese production	https://www.youtube.com/watch?v=wxm8jTzU_8o
V- Food Microbiology	
Sources of contamination of fresh food.	https://www.youtube.com/watch?v=JQacTdcE-7Y
Microbial spoilage of foods.	https://www.youtube.com/watch?v=Absrge44uJg
Preservation of foods :-a) Low and high temperature	https://www.youtube.com/watch?v=62Vz5_ooZGM
b) dehydration,	https://www.youtube.com/watch?v=k-KHRJkVaGI
c) high osmotic pressure	https://www.youtube.com/watch?v=quXiw5t7UaM
d) Chemical preservation	https://www.youtube.com/watch?v=osqfOuOs81s
e) Radiations	https://www.youtube.com/watch?v=XGoaxvZKU5U
f) Canning	https://www.youtube.com/watch?v=QmxxKXKqC88
Fermented foods : Idli	https://www.youtube.com/watch?v=Pnli1YQIRe0
Pickles	https://www.youtube.com/watch?v=mMa_Fd-0mis
Sauerkraut	https://www.youtube.com/watch?v=e_kkhRmpMkU
Food poisoning : Food infection	https://www.youtube.com/watch?v=9UX7-jSdfMs
Food intoxication	https://www.youtube.com/watch?v=-iIDNskrf-k
Indicators of food contamination as per WHO.	https://www.youtube.com/watch?v=9sDhFBq5X_w
VI- Enzymology and Metabolism	
Nature and Definition	https://www.youtube.com/watch?v=OQf5VktNkOU
Classification and nomenclature of enzymes.	https://www.youtube.com/watch?v=2S2wCL1A4tg
Enzyme	https://www.youtube.com/watch?v=ozdO1mLXBQE
Active site	https://www.youtube.com/watch?v=IA-0nzEoxes
Substrate	https://www.youtube.com/watch?v=wp_yyDEEC3k
Coenzyme, Cofactors & Prosthetic groups	https://www.youtube.com/watch?v=EzuKxqojSOQ

Holoenzyme and Apoenzyme	https://www.youtube.com/watch?v=M6Y4B8YyyVw
Activation Energy	https://www.youtube.com/watch?v=0Z5g1MpCtdQ
Isoenzyme	https://www.youtube.com/watch?v=ovDYd5Aj0qs
Allosteric Enzymes	https://www.youtube.com/watch?v=u-sBcAmwWRO
Inhibitors	https://www.youtube.com/watch?v=BitCvHKxfHU
Immobilised enzymes	https://www.youtube.com/watch?v=zmxtmz_vxwk
General strategies of metabolism.	https://www.youtube.com/watch?v=HrYRMknYHrk
EMP Pathway	https://www.youtube.com/watch?v=Vptddx2_Bxw
TCA Cycle	https://www.youtube.com/watch?v=-ptxPt4ojLk
Oxidative Phosphorylation	https://www.youtube.com/watch?v=BvKRfOaqv9Q
Electron Transport Chain	https://www.youtube.com/watch?v=dkL8tVQushE