University of Mumbai
Examination 2020

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: __civil engineering__

Curriculum Scheme: Rev2016

Examination: TE Semester V

Course Code: CEC504 and Course Name: Environmental Engg-I____

Time: 2 hour   Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Which air pollutant cause corrosion of building?
Option A:	SO_2
Option B:	CO_2
Option C:	NO_2
Option D:	CO
2.	70dB + 70dB =
Option A:	140dB
Option B:	70dB
Option C:	35dB
Option D:	73dB
3.	Find the concentration of 120 µg/m3 of SO2 in the air in ppm at 300 C and one atmospheric pressure
Option A:	0.0466
Option B:	0.0566
Option C:	0.0656
Option D:	0.0666
4.	A circular sedimentation tank of dia. 20M has to treat 3768000 lit/day of water. find overflow rate.
Option A:	550 lit/hr/m2
Option B:	500 lit/hr/m2
Option C:	650 lit/hr/m2
Option D:	600 lit/hr/m2
5.	The detention period of a rectangular sedimentation tank is given by _____
Option A:	t = LBH/Q
Option B:	t = LB/HQ
Option C:	t = Q/LBH
Option D:	t = HQ/LB
6.	What is formed when coagulant is added to water?
Option A:	Scum

Option B:	Soap
Option C:	Bubbles
Option D:	Floc
7.	The clear distance between the paddles and the wall or the floor of the flocculator tank is about _____
Option A:	5 - 10 cm
Option B:	10 - 20 cm
Option C:	15 - 30 cm
Option D:	20 - 40 cm
8.	This coagulant is costlier than alum and generally avoided for treating ordinary public supplies
Option A:	Copperas
Option B:	ferric chloride
Option C:	ferric chloride
Option D:	sodium aluminate
9.	Zeolite process is used for removal of
Option A:	Hardness
Option B:	Colour
Option C:	Odour
Option D:	Acidity
10.	Loss of head in rapid sand filter is limited to
Option A:	1.5- 2.5 m
Option B:	2.5- 3.5m
Option C:	1-3m
Option D:	3.5 - 5m
11.	Slow sand filter can remove turbidity up to
Option A:	10mg/l
Option B:	30mg/l
Option C:	50mg/l
Option D:	75mg/l
12.	Bleaching powder contains the percentage of chlorine
Option A:	80
Option B:	60
Option C:	40
Option D:	30

13.	This is not the disinfectant
Option A:	Iodine
Option B:	Fluorine
Option C:	Chlorine
Option D:	Bromine
14.	Which of the following is not a classification of traps based on their shape
Option A:	P - trap
Option B:	S – trap
Option C:	Q – trap
Option D:	W – trap
15.	The design period of storage reservoir can be given as _____
Option A:	50yr
Option B:	20yr
Option C:	30yr
Option D:	10 yr
16.	This disinfectant has more destructive power to kill bacteria
Option A:	Hypochlorous acid
Option B:	Mono chloramine
Option C:	Dichloramine
Option D:	Trichloramine
17.	This is the best method of population forecasting
Option A:	Arithmetic increase method
Option B:	Geometric increase method
Option C:	Incremental increase method
Option D:	Graphical method
18.	Which distribution system is suitable for unplanned city
Option A:	Dead end system
Option B:	Radial system
Option C:	Ring system
Option D:	Gravity system
19.	Fluoride content should not exceed
Option A:	1.5 mg/l
Option B:	2.5 mg/l
Option C:	3.5 mg/l
Option D:	4.5 mg/l
20.	Fe and Mn are removed from water by
Option A:	Aeration
Option B:	sedimentation
Option C:	filtration
Option D:	precipitation

Q2 (A)	Solve any two out of three 5 marks each
a	Find the settling velocity of discrete particle in water under conditions When Reynolds No. is less than 0.5. The diameter and specific gravity of Particle is 7.5×10^{-3} cm and 2.7 respectively. Take the kinematic viscosity of Water 1.0×10^{-2} cm^2/sec
b	Explain the intake structure with neat sketch
c	Explain the dry and wet feeding process of coagulant.
Q2 (B)	Solve any one 10 Marks each
a	Design the rectangular sedimentation tank to treat 7.5MLD of raw water. Assume detention period of 3 hours and flow rate 600 lit/hr/m^2. Give also factor affecting sedimentation process.
b	Enlist the different disinfection process. Explain any two of them. Also explain the formation of chloramine

Q3.(A)	Solve any two Questions out of three 5 marks each
a	Explain the lime soda process of hardness removal.
b	.
c	Show that 80dB + 80dB= 83dB
Q3 (B)	Solve any one
a	A rapid sand filter has to treat 10MLD of raw water. Design the under drainage system for the same. Assume the rate of filtration 4000 Lit/hr/m^2 . Assume 3 % water for backwashing
b	Explain the global effects of air pollution