

reviewer4@nptel.iitm.ac.in ▼

## Courses » Introduction to Finite Volume Methods II

Announcements Course Ask a Question **Progress** 

FAQ

## **Unit 3 - Week 2 -Linear solvers + Convection term discretisation**

Register for **Certification exam** 

## Course outline

How to access the portal

Week 1 - Linear solvers

Week 2 - Linear solvers + Convection term discretisation

- Linear solvers-VI
- Linear solvers-VII
- Linear solvers-VIII
- Convection term
- discretisation-I
- Convection term discretisation-II
- Quiz: Assignment 2
- Feedback For Week 2
- Solution for Assignment 2

## **Assignment 2**

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

Due on 2019-02-13, 23:59 IST.

- 1) For solving  $A\phi=b$  using an iterative solver such that  $\phi^{(n)}=B\phi^{(n-1)}+Cb$ . 1 point Which is true?
  - B+CA=I ensures that the solution will not change with subsequent iterations once exact solution is reached.
  - Spectral radius of **B** should be less than 1
  - Some sort of stopping criteria is necessary for checking convergence of the iterations.
  - All of the above

No, the answer is incorrect.

Score: 0

**Accepted Answers:** 

All of the above

2) For Jacobi method,  $M\phi^{(n)}=N\phi^{(n-1)}+b$  is used to solve  $A\phi=b$  and A is written as  $oldsymbol{A} = oldsymbol{L} + oldsymbol{D} + oldsymbol{U}$  , then



$$oldsymbol{M} = oldsymbol{D}$$
 and  $oldsymbol{N} = oldsymbol{L} + oldsymbol{U}$ 



$$oldsymbol{M} = oldsymbol{D}^{-1}$$
 and  $oldsymbol{N} = oldsymbol{L} + oldsymbol{U}$ 



$$oldsymbol{M} = (oldsymbol{D} + oldsymbol{L})$$
 and  $oldsymbol{N} = oldsymbol{U}$ 



$$M=(D+L)^{-1}$$
 and  $N=U$ 

No, the answer is incorrect. Score: 0

111001 2

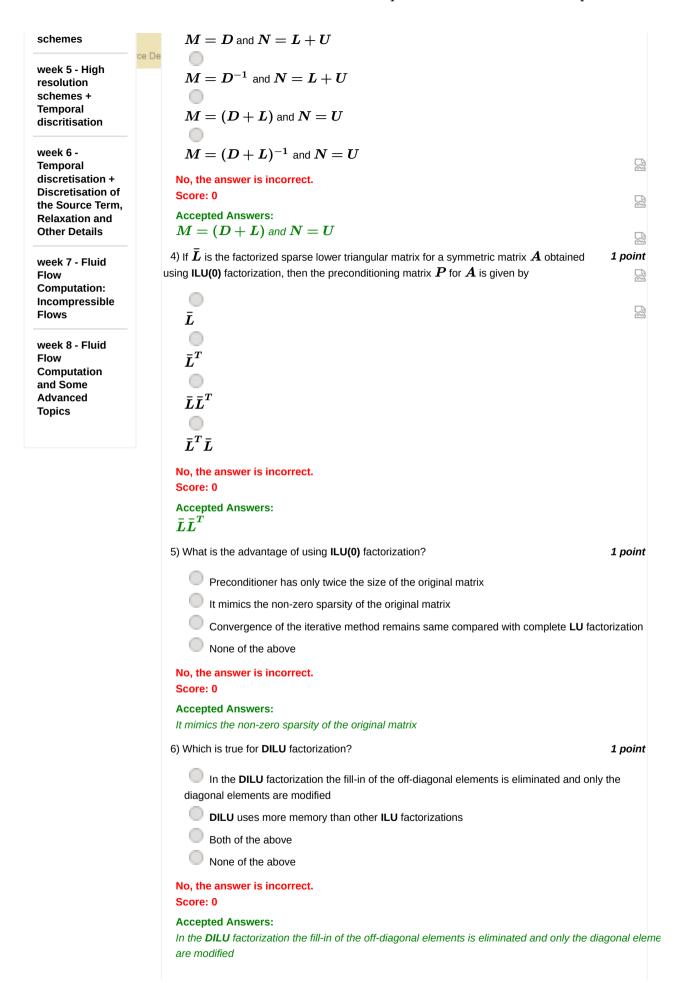
© 2014 NPTEL - Privacy & Terms - Honor Code - FAQs -

A project of



Funded by

In association with



7) Necessary condition for using gradient methods for solving system of linear equations $m{Ax} = m{b}$ Matrix $m{A}$ should be symmetric Matrix $m{A}$ should be positive definite	1 point
	<u> </u>
The quadratic minimization function $Q(\phi)$ has a global minimum  All of the above  No, the answer is incorrect.  Score: 0  Accepted Answers:  All of the above  8) If matrix $P$ and $A$ are symmetric, then $P^{-1}A$ is  Necessarily symmetric  Maybe symmetric  Necessarily anti-symmetric  Diagonal matrix  No, the answer is incorrect.  Score: 0	
	Ç.
	_
	1 point
Accepted Answers:	
Maybe symmetric	
Previous Page	End