

Course outline

How does an NPTEL online course work?

Assignment 0

Lecture Material

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

- Lecture 29 : PETSc and MPI basics

- Lecture 30 : PETSc - Creating Vectors and Matrices

- Lecture 31 : KSP object and solving a system

- Lecture 32 : Poisson equation in PETSc

- Lecture 33 : Nonlinear Solver of PETSc

- Quiz : Assignment 6

- Feedback Form

Week 7

Week 8

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Detailed Solution

Live Interactive Session

Text Transcripts

Assignment 6

The due date for submitting this assignment has passed.

Due on 2021-03-03, 23:59 IST.

As per our records you have not submitted this assignment.

1) Which of the following function builds a vector for a particular vector implementation?

1 point

- a. VecSetType
- b. VecSetFromOptions
- c. VecCreate
- d. None of the above

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
a. *VecSetType*

2) Which of the following function is used to get the vector type name (as a string) from the object Vec?

1 point

- a. VecSetType
- b. VecSetFromOptions
- c. VecCreate
- d. VecGetType

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
d. *VecGetType*

3) Which of the following function is used to configure the vector from the options database?

1 point

- a. VecSetType
- b. VecSetFromOptions
- c. VecCreate
- d. VecGetType

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
b. *VecSetFromOptions*

4) Which of the following function used in PETSc to insert or add a block of values into a matrix?

1 point

- a. MatSetType
- b. MatSetFromOptions
- c. MatCreate
- d. MatSetValues

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
d. *MatSetValues*

5) Which function in PETSc returns a pointer to the element values in the matrix?

1 point

- a. MatSetType
- b. MatGetArray
- c. MatCreate
- d. MatSetValues

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
b. *MatGetArray*

6) Which is an abstract PETSc object that manages all Krylov methods?

1 point

- a. SNES
- b. KSP
- c. TS
- d. PC

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
b. *KSP*

7) Which is an abstract PETSc object that manages all nonlinear solvers?

1 point

- a. SNES
- b. KSP
- c. TS
- d. PC

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
a. *SNES*

 8) To compute $y = x + \beta y$ in PETSc which function needs to be used?

1 point

- a. VecXPY
- b. VecYYPX
- c. VecXPBY
- d. VecMAXPY

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
b. *VecYYPX*

9) Which is an abstract PETSc object that manages all time-steppers (ODE integrators)?

1 point

- a. SNES
- b. KSP
- c. TS
- d. PC

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
c. *TS*

10) Which PETSc object is used to manage data for a structured grid in 1, 2, or 3 dimensions?

1 point

- a. DMDA
- b. KSP
- c. TS
- d. PC

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
a. *DMDA*