Comparison of characteristics of fast and thermal reactors, Role of fast reactors in Indian Nuclear Programme

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1 Quiz

1.1 Questions

1. What is the advantage of higher outlet temperature of the secondary coolant?

2. Which among the type of nuclear reactor operates at near atmospheric pressure?

3. Which among the following reactor is expected to have the highest thermodynamic efficiency?

a) BWR b) PWR c)PHWR d)LMFBR

4. The higher thermodynamic efficiency of sodium cooled fast reactor is attributed to:

a) absence of moderator b) higher thermal conductivity of sodium
c) low reactor pressure d) higher steam temperature

5. Higher margin in sodium cooled fast reactor is due to

(a) absence of moderator (b) low reactor pressure
(c) higher boiling point of sodium (d) higher thermodynamic efficiency

6. Which one of the following reactor uses uranium fuel in the most efficient manner?

(a) PWR (b) BWR (c) GCR (d) FBR

7. Fast reactors are important to India compared to many other countries because of

(a) low operating cost of fast reactors (b) low capital cost of fast reactors
(c) limited availability of uranium resources (d) availability of technology

8. Which one of the following is unique to KAMINI reactor?

(a) use of bred fuel (b) use of fast neutrons for fission
(c) Indigenous reactor (d) use of U-233 as fuel

9. India's research in fast reactor technology is aimed at

(a) reducing doubling time and breeding gain
(b) increasing doubling time and breeding gain
(c) increasing breeding gain and reducing doubling time
(d) reducing breeding gain and increasing doubling time

10. What is the purpose of using Thorium in the blanket of FBTR?

1.2 Answers

1. Higher steam temperature can be obtained

2. Sodium cooled fast reactor

3. LMFBR

4. Higher steam temperature

5. Higher boiling point of sodium

6. (d) FBR

7. (c) Limited availability of uranium resources

8. (d) Use of U-233 as fuel

9. (a) increasing breeding gain and reducing doubling time

10. To breed U-233 by nuclear transmutation