LECTURERS IN GOVERNMENT POLYTECHNIC COLLEGES (ENGINEERING AND NON-ENGINEERING) IN A.P TECHNICAL EDUCATION SERVICE. - NOTIFICATION NO.23/2018

METALLURGICAL ENGINEERING - 14TH MAR 2020 – S2 – REVISED KEY

Question Number : 7 Question Id : 2310981957

Intensive thermodynamic variables are;

Answer: Deleted

Question Number : 39 Question Id : 2310981989

Which of the following oxide addition results in polymerisation in a silicate slag?

Answer:

P_2O_5

Question Number : 49 Question Id : 2310981999

A 200mm × 200mm cross section bloom is continuously cast at a casting speed of 0.05 m/s. The amount of heat extracted from 0.7 m long mould is 1.28MW. Assume that the temperature of the steel is at its melting point while entering and leaving the mould. Latent heat of fusion for the steel is 278 kJ/kg and density of steel is 7800 kg/m^3. The thickness of solidified shell emerging from the mould will be:

Answer:

14.7 mm

Question Number : 51 Question Id : 2310982001

150 tonnes of liquid steel at a temperature of 1900 K is contained in a refractory-lined cylindrical laddle which is open at the top. Consequently 4.91m^2 area of steel is exposed. (Given: specific heat of molten steel, C = 788J/Kg-K, emissivity of steel surface = 0.5, Fraction of total radiation is 0.437; Stefan Boltzman constant = 5.667 x 10^{-8} Watts m^{-2} K^{-4}). The rate of temperature drop of steel is:

Answer: Deleted

Question Number : 80 Question Id : 2310982030

If the volume of a material does not change during deformation, then the Poisson's ratio should be:

Answer:

0.50

Question Number : 81 Question Id : 2310982031

Which combination of three items given in options — scale-load in kgf-indenter— is incorrect for the measurement of hardness?

Answer:

B-100-1/8" diamond ball

D-100-1/16" steel sphere

Question Number : 97 Question Id : 2310982047

For an isotropic material subjected to a three-dimensional stressing, which of the following relationships exists?

Answer: Deleted

Question Number : 102 Question Id : 2310982052

The true strain at fracture of a tensile specimen is 0.75. The percentage reduction in the cross-section area is about:

Answer:

52.76 %

Question Number : 109 Question Id : 2310982059

A tensile load of 100 N is applied to an aluminum-boron composite of 1 mm^2 cross-sectional area. The volume of the parallel fibres is 30%. When the load axis is parallel to the fibres, then the stress in the fibres is:

Answer: Deleted

Question Number : 118 Question Id : 2310982068

According to Von-Mises criterion of yielding, the approximate minimum roll pressure at which rolling may be carried out is:

Answer: Deleted