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Assignment 3

W3A3Q1-MCQ: As stated by Professor B Ravi, what is the thumb hand formula utilized to determine the knee load during a jump?

1. Knees take 8 to 10 times the body weight while jumping
2. Knees take nearly 5 times the body weight while jumping
3. Knees take nearly thrice the body weight while jumping
4. Knees take no additional load while any rigorous physical activity

W3A3Q2-MCQ: Referring to the module Technology to Solutions, what is the purpose of the tiny holes present in tyre molds?

1. To drain out excess material
2. To provide a better texture for grip
3. To make the molding process faster
4. To let the trapped air escape out

W3A3Q3-MCQ: Which of the following incidents was like a pleasant accident observed by NFTDC while testing the total knee prosthesis in a specially designed machine?

1. The team realized that they needed to fabricate a new acceptor alloy which is more bio friendly
2. The testing machine broke down before the total knee prosthesis yielded
3. The team had to synthesize a new polyester material which went on to be applied to other important medical devices applications
4. The knee prosthetic broke down in one go for a certain configuration which helped in creating a stronger design

W3A3Q4-MCQ: Why is TKP (Total Knee Prosthesis) called a ‘Mega Prosthesis’?

1. Because the size of the prosthesis is large
2. Because the surgery takes a lot of time to conduct
3. Because the incision made on the patient during the surgery is large
4. Because the prosthesis is manufactured at a large scale

W3A3Q5-MCQ: Apart from titanium, which among the following materials was used in the making of the TKP (total knee prosthesis) as discussed by professor B. Ravi?

1. Graphite
2. Plastic
3. Cobalt Chromium

4. Stainless steel

W3A3Q6-MCQ: According to Prof. Ramesh Singh in the module Technology to Solution, why is a 2-axes system not suitable for Vent Cleaning system for tyre molds?

1. The laser will melt the mold if a system less than 3-axes system is used
2. The laser needs to be pointed perpendicular to the surface of the tyre mold, so it requires more axes of freedom
3. The 2-axes system is suitable for vent cleaning and the above statement is false
4. There are more than 1600 vent holes in a tyre mold, and a 2-axes system cannot reach the vent holes

W3A3Q7-MSQ: As we talked about in the lecture on total knee prosthesis, why were imported knee prosthesis not fit for most Indians?

1. Because the prosthesis size variations available were according to the American standards and would not match Indian body types
2. Because the prosthesis was generally very heavy and cause the patient to limp
3. Because the prosthesis was very expensive and Indian patients cannot afford it
4. Because the prosthesis's quality would get compromised in the Indian climatic conditions

W3A3Q8-MCQ: Which of the following is NOT a part which makes up the TKP (total knee prosthesis)?

1. Tibial tray and stem
2. Circli
3. Collar bush
4. Condylar bush

W3A3Q9-MCQ: According to the lecture 'Technology to Innovation', which of the following options is considered the best technology for cleaning the curved surface of a tyre mould?

1. Water jets
2. Line laser
3. Sandpaper
4. Electrode spray

W3A3Q10-MCQ: What is a major problem with micro-machining?

1. The tool bit tends to break while machining at that scale
2. Motors today is incapable of such small-scale movement and precision
3. The physics is unviable, and there is no market for such a process of manufacturing

4. It is impossible to make machining tools at that scale