Prelim Bits 03-02-2019

Operating Ratio

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- The finance minister said that the operating ratio of the railways is expected to improve from 98.4% in 2017-18 to 96.2% in 2018-19 and to 95% in 2019-20.
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- The operating ratio shows the efficiency of an organization’s management by comparing operating expense to net sales.
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- The smaller the ratio, the greater the organization's ability to generate profit if revenues decrease.
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- The operating ratio of Indian Railways was under stress by December 2018.
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- The main reason for the stress is that the expenditure is continuing to far exceed earnings and thereby Indian Railways is facing a dismal financial scenario.
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- Higher operating ratio for railways simply means that the national transporter does not have money for capital investments.
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- The implementation of the Seventh Pay Commission has put a heavy burden on the railways which contributed to the increase in its expenditure.
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Microbial Fuel Cell (MFC)

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- A microbial fuel cell (MFC) is a bio-electrochemical device that harnesses the power of respiring microbes to convert organic substrates directly into electrical energy.
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- At its core, the MFC is a fuel cell, which transforms chemical energy into

electricity using oxidation reduction reactions.
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- The bacteria are made to act upon the organic substrates or waste water.
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- These bacteria are isolated from the very wastewater they are meant to degrade.
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- They feed on the organic material in the water and break it down under anaerobic (without oxygen) conditions, releasing electrons in the process.
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- The electrons are collected at the anode which results in a current in the circuit.
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Surgery: 'Neglected Step Child'

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- According to a study published in a research letter to The Lancet journal it is estimated that 4.2 million people around the world die every year within 30 days after surgery.
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- It is more than those who die from HIV, tuberculosis, and malaria combined.
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- Also half of the post-operative deaths occur in low- and middle-income countries (LMICs).
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- The Lancet Commission on Global Surgery identified that 313 million surgical procedures are performed each year.
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- However little is known about the quality of surgery globally, as robust postoperative death rates are available for only 29 countries.
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- Based on 4.2 million deaths, 7.7 per cent of all deaths globally occur within 30 days of surgery.
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- At present, around 4.8 billion people worldwide lack timely access to safe and affordable surgery and it is estimated that there is an annual unmet need for 143 million procedures in LMICs.
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Intermediate-Range Nuclear Forces Treaty (INF)

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- America had withdrawn from the Intermediate-Range Nuclear Forces Treaty recently.
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- The Treaty between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles is commonly referred to as the INF Treaty.
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- The INF treaty resolved a crisis of the 1980s when the Soviet Union deployed a missile in Europe called the SS-20, capable of carrying three nuclear warheads.
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- The United States responded with cruise and Pershing II missiles based in Europe.
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- The treaty prohibited land-based cruise or ballistic missiles with ranges between 500 to 5000 kilometers.
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- It did not cover air- or sea-launched weapons such as cruise missiles fired from ships, submarines or airplanes, although those missiles fly similar distances.
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Source: PIB, The Hindu, Indian Express

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