NEXT IAS

DAILY NEWS ANALYSIS

18th December

Explained

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Decoded

PRACTICE QUESTION

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EXPLAINED

1. LS PASSES SHANTI BILL, RS PASS BILL FOR 100% FDI IN INSURANCE SECTOR

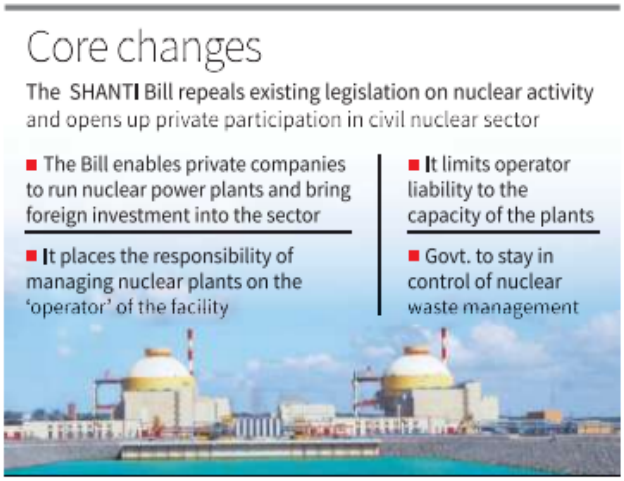
Backdrop : LS passes nuclear energy Bill allowing privatisation and RS passes Bill for 100% FDI in insurance sector

Relevance : GS 2/ Parliamentary procedures and Policies and schemes in news

About the News :

- The Lok Sabha on Wednesday passed the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Bill, 2025, despite demands by several Opposition parliamentarians for referring the legislation to a parliamentary panel.
- A day after the Lok Sabha passed the Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Bill, the Rajya Sabha on Wednesday passed the legislation which allows 100% foreign direct investment in the insurance sector.

SHANTI Bill :



Opposition Questions on Timing and Corporate Interest

- Congress MP **Manish Tewari** questioned whether it was a coincidence that the Bill coincided with reported interest by the **Adani Group** in entering the nuclear sector.
- Science Minister **Jitendra Singh** rejected the insinuation, stating that the Bill was not linked to any specific company and that such claims brought "disrepute to the House."

Key Contention: Removal of Supplier Liability Clause

- A major point of debate was the **removal of a provision** from the **Civil Liability for Nuclear Damage Act, 2010** that allowed plant operators to seek recourse from suppliers if faulty equipment caused an accident.
- Mr. Tewari recalled that in 2008, the **Bharatiya Janata Party** had moved a no-confidence motion against the **Manmohan Singh** government partly due to the absence of such a clause.
- He argued that its presence later deterred foreign companies, even after the **U.S.-India nuclear deal** and India's waiver from **Nuclear Suppliers Group** sanctions, because suppliers faced potentially unlimited liability.

Government's Defence: Changed Technology and Risk Profile

- Mr. Singh acknowledged the BJP's earlier opposition but said the liability clause had created "reservations in collaborators."
- He argued that circumstances had changed since 2010, citing advances in technology such as **small modular reactors** and the recently announced **Nuclear Mission**.
- According to him, reactors would now be safer and suitable even for dense areas, altering the risk of catastrophe and justifying the new framework.

Concerns Over Liability Cap

- **Supriya Sule** questioned the rationale behind **capping operator liability at ₹3,000 crore**, asking how this figure was calculated and whether it was adequate in the event of a serious nuclear accident.

Civil Liability for Nuclear Damage Act, 2010

It provides the legal framework for **compensation to victims of nuclear accidents** and defines **liability and responsibility** in the event of nuclear damage in India.

- Enacted after the **Indo–US Civil Nuclear Agreement (2008)** to enable foreign cooperation in nuclear energy.
- Intended to balance **public safety and victim compensation** with the need to attract **foreign suppliers and investors**.

Key Features of the Act

1. **Operator's Strict and No-Fault Liability**
   - The **operator of a nuclear installation** is solely and strictly liable for nuclear damage.

- Victims do **not need to prove negligence or intent** to claim compensation.

2. **Cap on Operator's Liability**
   - Operator's liability is capped at **₹1,500 crore** (can be increased by the government).
   - Beyond this, the **Central Government** pays compensation, taking total liability up to **₹2,600 crore** (aligned with international conventions).
3. **Right of Recourse Against Suppliers (Section 17)**
   - A **unique and controversial provision**.
   - Allows the operator to claim compensation from suppliers if:
     - The contract provides for it, or
     - The nuclear accident is due to **defective equipment or services**, or
     - There is **wilful negligence or intent**.
   - This clause differs from global norms and has been a **major concern for foreign suppliers**.
4. **Nuclear Damage Claims Commission**
   - Establishes a special mechanism to **speed up compensation claims**.
   - Civil courts' jurisdiction is barred to ensure faster relief.
5. **Time Limits for Claims**
   - Claims for personal injury: up to **20 years**.
   - Claims for property damage: up to **10 years**.

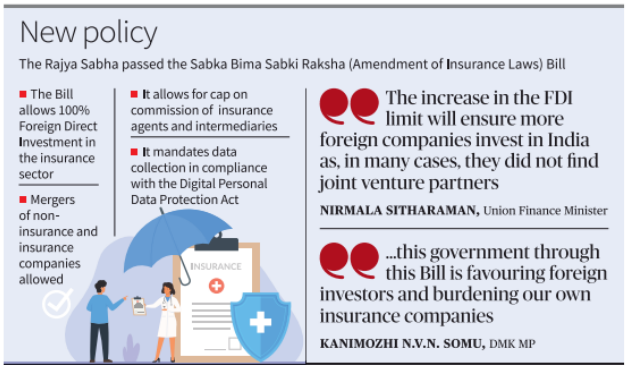
Significance

- Ensures **victim-centric compensation** in a high-risk sector.
- Reflects India's sensitivity after disasters like **Bhopal Gas Tragedy**, where victims faced inadequate remedies.
- Enhances **accountability of suppliers**, unlike many international regimes.

Criticism and Challenges

- **Discouraged foreign investment**, particularly from U.S. and European nuclear companies.
- Seen as **deviating from international nuclear liability conventions**, which place liability entirely on operators.
- Recent policy debates and proposed reforms seek to **dilute or remove supplier liability** to boost private and foreign participation.
- Raises critical questions on the **trade-off between nuclear safety, public interest, and investment climate**.

100% FDI in insurance sector



- The Rajya Sabha passed the **Sabka Bima Sabki Raksha (Amendment of Insurance Laws) Bill**, a day after its passage in the Lok Sabha.
- The Bill allows **100% foreign direct investment (FDI)** in the insurance sector.
- The Upper House also passed the **Repealing and Amending Bill**, which had been cleared by the Lok Sabha earlier.

Government's Rationale for 100% FDI in Insurance

- Replying to the debate, Union Finance Minister **Nirmala Sitharaman** said the Bill clearly lays out the **regulatory structure** for insurance.
- She assured that **premiums collected from Indian customers by foreign insurers would remain within India**.
- She added that private insurers already participate in Union government welfare schemes, and the Bill would ensure that **foreign insurance companies are also bound to take part in social sector activities and government schemes**, with no scope to evade this responsibility.

Investment, Competition and Premium Reduction

- Ms. Sitharaman argued that raising the FDI limit to 100% would attract more foreign insurers, especially as many companies had earlier failed to find suitable joint venture partners.
- Increased participation would **enhance competition**, which in turn should **lower insurance premiums** for consumers.

Concerns Over Data Privacy and Foreign Control

- Initiating the debate, Congress MP **Shaktisinh Gohil** warned that the Bill posed **data privacy risks**, as foreign insurers would require PAN and Aadhaar details, potentially increasing digital fraud.
- He urged the government to learn from the experience of **privatising civil aviation** and

reiterated the demand for Select Committee scrutiny.

Allegations of Undermining Indian PSUs

- DMK MP **Kanimozhi N.V.N. Somu** claimed that once implemented, the Bill could hand over an insurance market worth **$600 billion** to foreign investors.
- She described this as "daylight robbery" and accused the government of favouring foreign investors instead of **strengthening domestic public sector insurance companies**.

Passage of Repealing and Amending Bill

- The Rajya Sabha also passed the **Repealing and Amending Bill**, which seeks to **repeal 71 obsolete laws**, correct drafting errors, and remove discriminatory provisions.
- Union Law Minister **Arjun Ram Meghwal** said the reform prioritised **ease of living and ease of doing business**, calling it a step towards freeing India from a "colonial mindset."

Laws Proposed to Be Repealed

- The repealed statutes include the **Indian Tramways Act, 1886**, **Levy Sugar Price Equalisation Fund Act, 1976**, **Bharat Petroleum Corporation Limited (Determination of Conditions of Service of Employees) Act, 1988**, **General Clauses Act, 1897**, **Code of Civil Procedure, 1908**, and the **Indian Succession Act, 1925**, among others.

2. HOW TO PROTECT ARAVALLI RANGE ?

Backdrop : How do the Aravalli hills and ranges prevent the desertification of the Indo-Gangetic plain? What were the recommendations of the Central Empowered Committee? Why was it necessary to arrive at a uniform definition of the Aravalli hills? Has the Supreme Court completely banned mining in the ranges?

Relevance : GS 3/ Environment, GS 1/ Geography

About the News :

- The Supreme Court (SC), in an order last month, settled on a uniform definition of the Aravalli hills and ranges, and paused the grant of fresh mining leases inside its areas spanning Delhi, Haryana, Rajasthan and Gujarat.

Importance of Aravallis :

- Apart from being nearly two billion years old and India's oldest mountain range, they serve as an important ecological barrier to prevent the desertification of the Indo-Gangetic plains.
- They help arrest the eastward spread of the Thar Desert into Haryana, Rajasthan and western Uttar Pradesh, and play a major role in stabilising climate, supporting biodiversity, and recharging groundwater.
- Stretching from Delhi to Gujarat across 650 km, the mountains support water-recharge systems and are the source of important rivers such as the Chambal, Sabarmati, and Luni.
- It is richly endowed with sandstone, limestone, marble, granite, and minerals such as lead, zinc, copper, gold, and tungsten.
- While historically mined for these resources, it has in the past four decades been excessively quarried for stone and sand.
- This has contributed to deteriorating air quality as well as plummeting groundwater recharge.
- A proportion of the mining has also been illegal.
- The Court noted that India is bound by international commitments, under the UN Convention to Combat Desertification, to protect vulnerable ecosystems such as the Aravalli range.

Mining threat and Action :

- Since the early 1990s, the **Environment Ministry** has framed rules allowing mining only in sanctioned projects, but these norms have been repeatedly violated, especially in the ecologically fragile **Aravalli Range**.
- In response to large-scale environmental damage, the **Supreme Court of India** intervened in 2009 and imposed a blanket ban on mining in

the Faridabad, Gurugram and Mewat districts of Haryana.

- The Court further tightened restrictions in May 2024 by prohibiting the grant of fresh mining leases and renewals across the Aravalli range.
- The Court tasked its **Central Empowered Committee** with a detailed examination of the issue.
- In March 2024, the CEC submitted recommendations calling for scientific mapping of the entire Aravalli range across States and a macro-level environmental impact assessment of mining activities.
- The CEC also recommended a strict ban on mining in ecologically sensitive areas, including protected habitats, water bodies, tiger corridors, key aquifer recharge zones and areas within the National Capital Region.
- It urged tighter regulation of stone-crushing units and advised that no new mining leases or renewals be allowed until proper mapping and impact assessments were completed.
- These recommendations were accepted by the Supreme Court in its November 2025 order.
- Subsequently, in June 2025, the Centre launched the **Aravalli Green Wall Project**, which aims to expand green cover in a five-km buffer around the Aravallis across 29 districts of Gujarat, Rajasthan, Haryana and Delhi, contributing to the restoration of 26 million hectares of degraded land by 2030.

Uniform Definition :

- The Court found that States were using inconsistent criteria to identify Aravalli formations.
- There have also been differing definitions, including by expert groups such as the Forest Survey of India (FSI) on what makes up 'Aravalli Hills and Ranges.'
- In 2010, the FSI had said hills with
  (i) slope >3°
  (ii) foothill buffer = 100m,
  (iii) inter hill distance or valley width= 500m and
  (iv) the area enclosed by above defined hills from all sides," would make up Aravalli hill and ranges.To resolve this, it constituted a committee comprising representatives from the Environment Ministry, the FSI, State Forest Departments, the Geological Survey of India and the CEC.
- This committee was tasked with creating a scientifically grounded, nationwide definition of the Aravallis.
- The committee submitted its findings in October 2025.
- The SC committee finally ruled that only hills above 100 metres would make the cut.
- The amicus curiae, K. Parameswar, objected that this was too narrow a definition and potentially opened all the hills below 100 metres for mining, compromising "...their continuity and integrity. "
- However, the Additional Solicitor General, Aishwarya Bhati countered that the definition on slopes, foothill buffers etc. as proposed by the FSI would, on the contrary, exclude large areas from the Aravalli Hills and Ranges.
- The committee recommendations of 100m was far more inclusive.
- The Court directed the preparation of a detailed **Management Plan for Sustainable Mining (MPSM)** covering the entire Aravalli range.
- The plan must demarcate areas where mining must be absolutely prohibited, identify zones where limited and highly regulated mining may be permitted, map sensitive habitats and wildlife corridors, evaluate cumulative ecological impacts, determine ecological carrying capacity, and articulate restoration and rehabilitation measures.

No ban Mining in Aravallis :

- The Court explained that past experiences show total bans often lead to the rise of illegal mining syndicates, violent sand mafias and unregulated extraction.
- The Court therefore opted for a calibrated approach: existing legal mining continues under tight regulation, new mining is paused until a scientifically driven plan is prepared, and permanently sensitive areas remain off-limits.

3. INDIA-OMAN TO SIGN FTA, IE 5

Backdrop : PM in Oman, to sign free trade agreement today

Relevance : GS 2/IR

About the News :

- IN A bid to strengthen economic ties, India and Oman are set to sign a Comprehensive Economic

Partnership Agreement (CEPA) on Thursday as Prime Minister Narendra Modi visits Muscat.

- Modi, who is on a three-nation tour, landed in Oman Wednesday, after visiting Jordan and Ethiopia.

India-Oman Relations :

Expanding ties with strategic partner

Oman is the third-largest export destination for India among the Gulf Cooperation Council countries, with bilateral trade reaching US$ 10.61 billion in FY 2024–25. The relationship is important for Delhi as the Gulf nation gives access to key trade routes in a volatile region. India is also Oman's fourth largest source of non-oil imports.

CEPA Negotiations and Scope

- Formal negotiations for the CEPA began in November 2023 and concluded in 2025.
- As a free trade agreement, it seeks to significantly reduce or eliminate customs duties on a wide range of goods, ease norms for trade in services, and promote investment flows between the two countries.

Role of Commerce Minister and Business Outreach

- Union Commerce Minister **Piyush Goyal** reached Muscat for the signing.
- Addressing the Oman–India Business Forum, he said both sides had invested significant effort in finalising the pact.
- He noted that Oman is signing an FTA after nearly 20 years, its last such agreement being with the **United States** in January 2006.

Sectoral Opportunities and Priority Areas

- Mr. Goyal highlighted strong potential for cooperation in textiles, footwear, automobiles and auto components, gems and jewellery, agrochemicals, and renewable energy.
- He also pointed to opportunities in services such as chartered accountancy, research and development, tourism, education, and healthcare.
- The four priority collaboration areas identified are **energy transition, infrastructure development, food security, and startups**.

Bilateral Trade Profile

- Oman is India's third-largest export destination among **Gulf Cooperation Council** countries.
- Bilateral trade reached **US$ 10.61 billion in FY 2024–25**.
- India is Oman's fourth-largest source of non-oil imports and third-largest market for non-oil exports in the same year.

Key Trade Items

- India's major exports to Oman include light oil, aluminium oxide, rice, boilers and machinery, electrical machinery, and aircraft components.
- Oman's key exports to India include crude petroleum, LNG, urea, organic chemicals, ammonia, industrial raw materials, and plastics.

Investment and Joint Ventures

- There are over **6,000 India–Oman joint ventures** operating in Oman, contributing about **US$ 7.5 billion** to Oman's economy over time.
- This includes formal outward direct investment of **US$ 675 million**, the total capital committed to joint ventures, and third-country investments.

OMAN : mapping

Ethiopia : Mapping

4. POSSIBLE DISCOVERY OF DARK MATTER SPARKS DEBATE

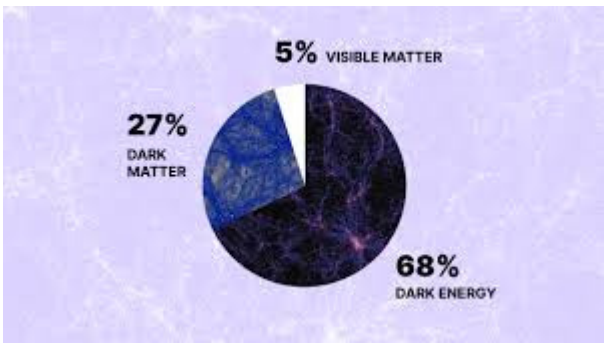
Backdrop : Physicists don't know what makes up dark matter; one hypothesis is that it is a new type of subatomic particle called WIMPs, which barely interact with normal matter and never with light; the trick to finding them then is high-energy particles released when two WIMPs annihilate each other

Relevance : GS 3/S&T

About the News :

- Is it a false alarm or a discovery that solves one of the greatest mysteries in cosmology?
- This is the question weighing on astronomers as they examine a study published recently in the Journal of Cosmology and Astroparticle Physics, which claims to have finally detected the elusive "dark matter".
- Dark matter is believed to have been around for most of the 14-billion-year history of the universe.
- Astronomers began searching for it in the early 1930s after the Swiss astronomer Fritz Zwicky observed that galaxies in the Coma Cluster were moving too quickly for the amount of ordinary matter it contained.
- He realised the speed of their rotation was so great that they should have flown apart as they didn't have enough matter to generate the gravity needed to hold them together.
- He deduced that some hidden mass could be providing the "extra gravity" required for the galaxies to stay intact. He named this dark matter.

WIMPS :



- According to the Standard Model of particle physics, ordinary (baryonic) matter that makes up the world around us consists of elementary particles such as baryons (protons and neutrons) and electrons, along with massless photons of electromagnetic radiation such as light.
- Baryons themselves are made up of even smaller particles called quarks and gluons.
- But all these fundamental particles form just 5% of all mass in the known universe.
- Dark matter accounts for 27%, while a mysterious force called "dark energy" makes up the rest.
- Physicists don't know what dark matter is made up of, but one hypothesis they have is a hitherto unknown type of subatomic particle called WIMPs.
- The name is short for 'weakly interacting massive particles'.
- According to physicists, WIMPs barely interact with normal matter and not at all with any form of electromagnetic radiation.
- Since dark matter doesn't emit, absorb or reflect light, astronomers can only study its gravitational effect on visible matter, such as stars and galaxies.
- The trick to finding it is then to spot its tell-tale signature: high-energy particles, such as gamma-ray photons that are released when two WIMPs collide and annihilate each other.

Claim of a Possible Dark Matter Signal

- Tomonori Totani of the **University of Tokyo** has reported the detection of a gamma-ray signal using data from the **Fermi Gamma-ray Space Telescope**.
- The signal consists of gamma rays with extremely high energy (around 20 giga-electron-volts) forming a halo-like structure toward the centre of the Milky Way, closely matching the expected shape of a dark matter halo.

Link to WIMP Dark Matter Models

- Prof. Totani stated that the observed gamma-ray energy spectrum aligns well with theoretical predictions for the annihilation of hypothetical **Weakly Interacting Massive Particles (WIMPs)**, with masses about 500 times that of a proton. This has raised excitement because WIMPs are among the leading dark matter candidates.

Scientific Caution and Skepticism

- Experts urge caution. According to **Tracy Slatyer**, Director of the **MIT Center for Theoretical Physics**, similar signals in the past initially appeared promising but were later explained by other astrophysical sources.
- She noted that the size of the observed signal is larger than what classic WIMP models predict, and comparable signals are not seen in other dark-matter-rich regions.

Possibility of Modelling Gaps

- **Rishi Khatri** from the **Tata Institute of Fundamental Research** said the findings indicate an "excess" of radiation beyond what current Milky Way models predict.
- This excess, he cautioned, may point to missing elements in galactic models rather than a true dark matter signal.
- He also noted that past claims of dark matter detection have often failed under closer scrutiny.

Statistical Significance and Alternative Sources

- While the reported signal appears to exceed the 5-sigma confidence threshold used in particle physics, uncertainties in modelling have not been fully accounted for.
- Astronomers must therefore rule out other possible sources of high-energy radiation, such as supernovae, neutron stars, or black holes, before attributing the signal to dark matter.

Broader Context: Dark Matter Evidence

- Independent evidence for dark matter already exists through gravitational effects such as lensing.
- A well-known example is the **Bullet Cluster**, where dark matter was inferred from how it bends light differently from normal matter during a cluster collision.

Implications for Cosmology

- If the signal withstands scrutiny and a dark matter particle is confirmed, it would not overturn the **Lambda-Cold Dark Matter model**.
- As Prof. Khatri explained, dark matter particles are already incorporated into this framework; what remains unknown is their precise nature.
- Even a 500 GeV WIMP would interact so weakly that the broader predictions of the model would remain largely unchanged.

An Ongoing Scientific Journey

- While the claim has generated excitement, researchers emphasise that confirmation will require independent verification and deeper analysis.

- Regardless of the outcome, the study highlights how close astronomy and particle physics may be to uncovering one of the universe's greatest mysteries.

5. WIRELESSLY LINKING 7 TRAINS-CHINAS TEST RUN SETS TEMPLATE

Backdrop : Seven freight trains, each carrying 5,000 tonnes, ran using a wireless system on the Baoshen Railway in Inner Mongolia.

Relevance : GS3/S&T

About the News :

- EARLIER THIS month, China achieved a major technological feat by running seven loaded freight trains as a set - without attaching them physically.
- Behind this test run was a wireless system that helped all seven trains - each carrying 5,000 tonnes of freight - to run much closer to each other than they would have had they been travelling individually.
- This new rail system can bolster China's already dominant railway freight industry, enabling it to move much larger quantities in a shorter time.

What was the system?

- On December 8, China ran the seven trains as a set using a wireless system on the Baoshen Railway in the Inner Mongolia Autonomous Region, according to state-run broadcaster China Central Television (CCTV).
- A major challenge was to connect the trains without mechanical coupling. Coupling refers to the mechanism to join railway vehicles such as locomo-tives, coaches and wagons.
- Instead, the trains were connected using the wireless control system developed by China Shenhua Energy, a subsidiary of state-owned mining and energy company CHN Energy.
- "Using wireless communica-tion and precise control, the system replaces traditional mechanical couplers and ensures coordinated multi-train oper-ation while maintaining safe spacing," CHN Energy said.

What does this mean for China?

- With this major break-through, China will be able to increase its freight loading significantly, as high as 50 percent, without building additional infrastructure.
- China is a heavy-weight in total freight loading and passenger movement in rail-ways.
- According to China Daily, the country's railway system transported over 2.33 billion tonnes of cargo during the January-July period of 2025.
- This vol-ume was a 3.3 percent increase over the previous year.
- Meanwhile, the total freight loading in Indian Railways during the financial year 2024-25 was 1.6 billion tonnes, which was its all-time high.
- While the Chinese railway system is already dominant in the region, it has taken up many tech projects to increase loading without expanding its infrastructure.
- CHN Energy said this test would provide a new technical option for heavy-haul railway systems worldwide.
- "Since its launch in 2022, the project has completed technical verification for multiple operat-ing scenarios, including single-locomotive runs, 5,000-ton loaded and empty trains, and 10,000-ton empty trains," said CHN Energy.

PRACTICE QUESTION

1. Consider the following statements :

1. India had allowed the private sector participation in nuclear sector post India-US civil nuclear deal.
2. The nuclear waste management is still a purview of the government control.

Which of the statements given above is/are correct ?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

2. Consider the following statements about Aravalli range in India :

1. These are the oldest block mountains in India.
2. They are limited only to the two states of India.
3. Unchecked Mining is posing as biggest threat to these mountains.

How many of the statements given above is/are correct ?

(a) Only one
(b) Only two

(c) All
(d) None

3. Consider the following countries :
1. Saudi Arabia
2. Yemen
3. Iraq
4. Iran
5. UAE

How many of the above countries share land border with Oman ?
(a) Only two
(b) Only three
(c) Only four
(d) All

4. The term like WIMPS (weakly interacting massive particles), often seen in news is associated with…?
(a) Dark matter research
(b) Biotechnology developments
(c) Thermal fusion research
(d) Organometallic compounds

Answer			
1. (c)	**2. (a)**	**3. (b)**	**4. (a)**

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