

AIR POLLUTION - FULL MIND MAP

Topic-wise | Hinglish | SSC / BPSC / BSSC / Railway

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1. Sources, Mercury & Basic Air Pollution

- coal, petrol aur diesel jalane par carbon aur nitrogen ke oxide paida karte hain, jo air pollution ke mukhya factor hain. [Q1]
- para ek global pollutant hai. yeh manushyon aur ecosystems ko negative roop se prabhavit karta hai. svarn khanan activity world mein para pollution ka ek main source hai. isliye statement 1 sahi hai. coal jalane par para gaisiy ke roop mein nikalata hai, isliye coal-based thermal power sanyantr para pollution karte hain. para bahut zyada vishaila tatv hai aur iske sanpark ka koi jnyat surakshit level nahi hai. [Q2]

2. Photochemical Smog, Primary & Secondary Pollutants

- photochemical smog tab banti hai jab nitrogen oxides (NOx) aur volatile organic compound (VOCs) suraj ki roshni mein reaction karte hain. in photochemical reactions se banane wala main secondary pollutant ground-level ozone hai. [Q3]
- NO₂, O₃ and peroxyacetyl nitrate in the presence of sunlight - photochemical smog suraj ki roshni mein nitrogen oxides aur volatile organic compounds ki reactions se banti hai. iske main secondary utpadon mein ozone aur peroksiesitail nitrate (PAN) shamil hain aur polluted air-mishran mein nitrogen daioksaaid bhi main component hota hai. [Q4]
- Peroxyacetylene nitrate - peroksiesitil nitrate ek peroksiesil nitrate hai. yeh photochemical smog mein present secondary pollutant hai. [Q5]
- carbon monoxide (CO) mukhya primary air pollutant hai. yeh odorless, colorless gas hai, jo fuel ke incomplete burning se banti hai. [Q6]
- Galat kathan: Sulphur dioxide; PAN (Peroxyacetyl nitrate), ozon aur smog secondary pollutant hain kyunki ve primary pollutants ki atmosphere ke saath reaction ke baad bante hain. jabki sulfur oxide, mainly sulfur dioxide, nitrogen oxides aur carbon monoxide primary pollutant hain, kyunki ve seedhe air mein phailakar atmosphere ko polluted karte hain. [Q7]
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3. Vehicle Emissions, Carbon Monoxide, Lead & CNG

- incomplete burning ke reason motar vahan aur sigaret se nikalane wali colorless gas carbon monoxide hai. ise sans ke saath lena harmful hai kyunki yeh rakt mein oxygen ko visthapit kar deta hai aur mrityu tak ka reason ban sakta hai. [Q9]
- vahan nikas mein mukhya pollutant emissions gas carbon monoxide hai. [Q10]
- yeh us samay ka historic pollution sawal hai jab petrol mein enti-nok yojak ke roop mein tetraethyl lead ka use hota tha. is reason lead-mishrit petrol se nikalane wala vahan-dhuan atmospheric lead pollution ka important source tha. [Q11]
- vahanon mein diesel aur petrol ke place par CNG (sanpidit natural gas) ka use kiya ja raha hai, kyunki CNG harmful products bahut kam amount mein paida karti hai. CNG ka main component methane (CH₄) hai. [Q12]
- carbon monoxide rakt-pravah ko prabhavit kar mrityu ka reason ban sakti hai. [Q13]
- carbon monoxide ka anavik bhar air ke saman hota hai. yeh kisi bhi anupat mein air ke saath svatantr roop se mishrit ho jati hai. [Q14]
- carbon monoxide ka anavik bhar air ke saman hota hai. yeh kisi bhi anupat mein air ke saath svatantr roop se mishrit ho jati hai. [Q15]

4. Fossil-fuel Pollution, Sulphur Dioxide & Fly Ash

- Burning of fossil fuels - fossil indhanon ka burning air pollution ke main karanon mein se ek mana jata hai. fossil fuels ke burning se paida air pollution aur pariveshi air mein zyada PM 2.5 concentration India mein lakhon asamayik mauton ka reason banti hai. [Q16]
- Sulphur dioxide - sulfur dioxide ek air pollutant gas hai aur yeh fossil fuels ke burning se nikalati hai. [Q17]
- Burning of Coal - phlai aish pollution thermal power sanyantron se hota hai. phlai aish thermal power sanyantron mein coal jalane par paida hone wala up-products hai. [Q18]
- Thermal power plant - phlai aish thermal power sanyantron mein koyale ke burning se paida up-products hai. thermal power production mein used nimn-gred koyale mein 30-45% rakh ki amount hoti hai. [Q19]

5. Bio-indicators, Lichens & Pollution Indicators

- Lichen - bio-sanketak aise living organism hain jo environment mein change ke per khas roop se clear pratikriya dete hain. kathor laiken air pollution, visheshakar sulfur dioxide pollution, ke upayogi bio-sanketak hain kyunki ve apna water aur zaroori nutrient tatv mainly soil ke bajay atmosphere se obtained karte hain. [Q20]
- Lichen - laiken algae aur kavak ke sahajivi union hain, matlab aisa parasparik roop se labhakari relation jismein algae component ko phaikobayont aur kavak component ko maikobayont kaha jata hai. ye kramashah svaposhi aur paraposhi hote hain. [Q21]
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- Air pollution - laiken algae aur kavak ke sahajivi union hain, matlab aisa parasparik roop se labhakari relation jismein algae component ko phaikobayont aur kavak component ko maikobayont kaha jata hai. ye kramashah svaposhi aur paraposhi hote hain. [Q24]
- Galat kathan: Sulphur Dioxide; sulfur dioxide ek air pollutant hai. jab yeh atmosphere mein bahut upar uthati hai, to water, oxygen aur dusre rasayanon ke saath reaction kar zyada amliy pollutant banati hai. [Q25]

6. Pollution Hotspots, VAYU, Brown Cloud & Delhi Winter

- Ankleshwar - yeh 2009-10 ke pollution-rainking context ka historic samasamayik sawal hai. us samay CPCB ke widespread environment pollution suchakank (Comprehensive Environmental Pollution Index) akalan mein ankaleshwar bahut zyada polluted industrial areas ki rainking mein shirsh par bataya gaya tha. [Q26]
- Jharia - grinapis (Greenpeace) India ne January, 2020 mein 'eyarapokailips' (Airpocalypse) report jari ki aur 287 mein se 231 Indian shaharon ko serious roop se polluted bataya. report ke ke mutabik Jharkhand ka coal-emissions wala jhariya India ka sabse polluted shahar hai. [Q27]
- rainfall air se kanon ko dhokar hata sakti hai. yeh dhulai bade kanon (10 maikron se upar ya 2.5 maikron se upar) par chhote kanon ki comparison mein zyada effective hoti hai. [Q28]
- September, 2018 mein traiphik jankshanon ke liye air pollution control upakaran WAYU (vind ogamenteshan pyoriphaing yunit/Wind Augmentation Purifying Unit) Delhi mein ITO chaurahe aur mukaraba chauk par lagaya gaya. ullekhanii hai ki BPSC ne WAYU ko "VAYU" likha hai, jo galat hai. [Q29]
- Asian bhura badal pollution ke reason mainly south Asia mein phaila tha. bhura badal air pollution ke reason bante hain aur khas roop se January-March ke dauran south Asian area mein phailate hain. [Q30]
- (A) is true, but (R) is false. - thandi air, garam air ki comparison mein bhari hone ke reason atmosphere mein zyada upar nahi uthati. isliye dhul ke kan, pollutant aur environmental gandagi surface ke upar atmosphere mein ek parat bana lete hain. halanki reason (R) galat hai kyunki sardiyan mein motar vahanon mein burning process ghatati hai. [Q31]

7. Indoor Pollution, Smoke, Ringelmann, Fly Ash Uses & Benzene

- Radon gas - redon colorless, odorless, radioactive gas hai. yeh soil se rediyam ke kshay-products ke roop mein natural roop se nikalati hai. [Q32]

EXAM TRAP sigaret ke dhuen mein anek harmful rasayan hote hain, jinmein benjin aur carbon monoxide dono shamil hain. benjin kainsarakari volatile organic compound hai, jabki carbon monoxide himoglobin se dridhata se judakar oxygen-vahan capacity ghatata hai. option (B) aur (C) dono tathyatmak roop se sahi hain; isliye dono ko svikar karna zaroori hai. [Q33]

- Smoke - ringalamain paimana (Ringelmann Scale) dhuen ke emissions ki aparadarshita, roop, ghanatv ya chhaya ke gred nirdharan ko kahate hain, jisse dhuen ki light-avarodhak capacity specified ki jati hai. [Q34]
- phlai aish coal burning ke utpadon mein se ek hai, jismein boyalar se phlyu gaison ke saath bahar nikalane wale mahin kan hote hain. phlai aish ka use construction inton ke construction mein kiya jata hai. iska sabse common use kankrit banane mein used Portland siment ke sthanapann ke roop mein hai. SiO_2 , Al_2O_3 aur kabhi-kabhi CaO phlai aish ke mukhya chemical component hain. inke extra ismein lead, arsenik aur tanbe ke kan jaise kuchh vishaile tatv bhi hote hain. isliye option (a) sahi jawab hai. [Q35]
- 1, 2, 3, 4 and 5 - benjin ek aisa rasayan hai jo kamare ke temperature par colorless ya halka pila drav hota hai. yeh natural prakriyaon aur human activities dono se banata hai aur bahut teji se air mein vashpit ho jata hai. [Q36]

8. Control Measures, AQI, WHO, NCAP, PRANA & Air Act

- Delhi government dwara shuru kiye gaye bio-decomposer aur chhidakav program ka purpose parali jalane se hone wale pollution ko samapt karna aur parali ko kanpost mein badalane ke liye kisanon ko bio-decomposer chhidakav nihshulk available karana hai. is program mein used 'pusa bayo-dikanpojar' (Pusa Biodecomposer) Indian agriculture research parishad dwara developed bahu-kavakiy sukshmajivi group (Consortium) hai, jo parali ke decomposition ko tej karta hai. isliye dono statement sahi hain. [Q37]
- Galat kathan: Cyclone Divider; chakravat vibhajak (Divider) air pollution ki janch ke liye use nahi kiya jata. chhanna thailiyon (Bags) ka use 50 maikromitar (Micrometer) se kam akar ke pollutant kanon ko filter karne ke liye kiya jata hai. [Q38]
- 2, 3 and 4 only - dusre countries ki tarah India ka air quality suchakank 8 main pollutants par based hai - (a) 10 maikromitar se kam akar ke kanikiy substance (PM10) (b) 2.5 maikromitar se kam akar ke kanikiy substance (PM 2.5) (c) nitrogen daioksaaid (NO2) (d) carbon monoxide (CO) (e) ozone (O3) (f) sulfur dioxide (SO2) (g) amoniya (NH3) (h) lead (Pb) CO aur O3 ko 8 ghante ke average par aur dusre pollutants ko 24 ghante ke average par mapa jata hai. NO2 aur O3 ki mapan ikai maikrogram per ghan mitar (Microgram per Cubic Metre) aur CO ki miligram per ghan mitar (Milligram per Cubic Metre) hai. ullekhanii hai ki national air quality suchakank ko environment forest aur climate change Ministry ne 17 aktubar, 2014 ko shuru kiya tha. [Q39]
- adyatan WHO dishanirdeshon ke ke mutabik PM2.5 ki varshik average concentration 5 $\mu\text{g}/\text{m}^3$ se zyada nahi honi chahiye, jabki 24-ghanta average anavaran 15 $\mu\text{g}/\text{m}^3$ se zyada nahi hona chahie. PM2.5, matlab 2.5 maikromitar (Micrometres) ya usase kam vyas wala mahin kanikiy substance, sabse khataranak pollutant hai kyunki yeh phephadon ki badha ko par kar rakt system mein enter kar sakta hai aur hriday-vahika aur shvasan rog aur kainsar paida kar sakta hai. ozon gas sabse common air pollutants mein se ek hai. ozon us condition mein contribution deta hai jise ham aam taur par "dhum-kohara" (Haze) ke roop mein anubhav karte hain. ozon asthma ko trigar karta hai kyunki yeh phephadon aur shvasan margin ke liye bahut uttejak hai. [Q40]
- national clean air program ko environment, forest aur climate change Ministry ne January 2019 mein shuru kiya. iska purpose pure country mein air pollution ki samasya se widespread roop se nipatana tha aur 20-30% kami ka target kanikiy substance (PM10 aur PM2.5) ki concentration mein 2024 tak obtained karna tha, jismein 2017 ko basis year rakha gaya. [Q41]
- Monitoring the National Clean- Air Programme (NCAP) - pahal - vivaran: shubharanbh (Launch) date - 07 September, 2021; pura naam (Full Name) - air-pollution standard incomplete nagaron ke liye portal (Portal for Regulation of Air-Pollution in Non-Attainment Cities - PRANA) purpose - yeh national clean air program (NCAP) ke karyanvayan ke management aur monitoring ke liye portal hai. yeh city air action scheme ke karyanvayan ki physical aur vitti condition par nazar rakhne (Track) mein help karta hai aur NCAP ke tahat air quality management ke prayason ki janakari janata tak pahunchata hai. [Q42]
- India ke national air quality suchakank mein 101 se 200 tak ka AQI "medium" (Moderate) ya "medium roop se polluted" category mein ata hai. AQI mein ath pollutant shamil hain: PM10, PM2.5, NO2, SO2, CO, O3, NH3 aur Pb. [Q43]
- air (nivaran aur control ke pollution) Act ko 1981 mein enacted kiya gaya aur India mein air pollution ki roktham, control aur upashaman ke liye 1987 mein sanshodhit kiya gaya. air (nivaran aur control ke pollution) Act ke tahat nimn paribhashaen hain: • dhara 2(a) 'air pollutant' ko kisi bhi thos, drav ya gaisiy substance ke roop mein define karti hai jo environment, manushyon, plants, animals ko damage pahuncha sakta hai ya sanpatti ko nukasan pahuncha sakta hai. [Q44]

9. Metro Pollutants, CCAC, Catalytic Converter & Smog Chemistry

EXAM TRAP sabhi mahanagaron ke liye koi ek universal “mukhya pollutant” nahi hota; main pollutant shahar, weather, emissions-sources aur weather-science ke ke mutabik badal sakta hai. shahari air mein alag-alag anupat mein kaniy substance, nitrogen oxides, carbon monoxide, ozone, sulfur dioxide aur volatile organic compound paye ja sakte hain. India ka AQI PM10, PM2.5, NO2, SO2, CO, O3, NH3 aur Pb ka akalan karta hai; woh sabhi mahanagaron ke liye kisi ek pollutant ko universal mukhya pollutant declared nahi karata. [Q45]

- climate aur clean air gathabandhan (CCAC) ek svaichchhik international sajhedari hai, jiska centre methane, blaik carbon aur haidrophlorokarban jaise alpayu climate pollutants ko kam karna hai. yeh G20 ki aupacharik initiative nahi hai. [Q46]
- Palladium - catalytic parivartak ek emissions-control (Emission-Control) upakaran hai jo dhuan gas mein vishaili gaison aur pollutants ko apachayan-oksikaran reaction (Redox Reaction) utprerit kar kam vishaile pollutants mein badalata hai. catalytic svayan aam taur par bahumuly (Precious) dhatuon ka mishran hota hai. [Q47]
- Oxide of nitrogen and sulphur - paranparagat salpharayukt smog mainly sulfur dioxide aur dhuen/kaniy pollution se judi hoti hai. photochemical smog suraj ki roshni mein mainly nitrogen oxides aur volatile organic compounds se banti hai. [Q48]