

Table of Contents

1. METAR and SPECI — Introduction

2. METAR/SPECI Code Structure

3. Reporting Met Elements — Detailed Rules

4. CAVOK — Definition and Conditions

5. Criteria for Issue of SPECI

6. SPECIAL Report (India-specific)

7. Explanation of METAR/SPECI Code Groups (Table 25.1)

8. TREND Forecast (Landing Forecast)

9. W' W' Significant Present & Forecast Weather (Table 25.3)

10. hs hs hs Cloud Base Code (Table 25.4)

11. Worked METAR/SPECI/TREND Examples

12. Practice Q&A

13. Master Reference Tables

1. METAR and SPECI — Introduction

METAR = Meteorological Aerodrome Report (routine)

SPECI = Aerodrome Special Met Report (issued when criteria are met)

Both encoded using **WMO Manual on Codes (WMO 306)**. Used by aircrew, operators, and ATC. Both have the **same code format**.

- METAR is issued at **half hourly or hourly** intervals.
- SPECI is issued **any time** criteria are met — for deterioration **immediately**, for improvement after **10 minutes**.

Full METAR/SPECI Code Form

```
METAR or SPECI  CCCC  YYGGggZ  dfffGfmfmKT/MPS/KMH  dndndnVdxdxdx
VVVVDv          VxVxVxVxDv          RDRDRi/VRVRVRVRi          w'w'
or
CAVOK           RDRDRi/VRVRVRVRi VRVRVRVRVRi
NsNsNshs hshs  T'T'/Td'Td'  QPhPnPnPn  REw'w'  WSDRWYDrDr
```

2. METAR/SPECI Code Structure

Code Group	Meaning	Example
METAR or SPECI	Report type identifier	METAR / SPECI
CCCC	ICAO location indicator (4-letter)	VIDP (Delhi)
YYGGggZ	Date/Time UTC — Day(YY), Hour(GG), Min(gg), Z=UTC	241130Z = 24th, 11:30 UTC
dddf(Gfmfm)KT/MPS/KMH	Wind direction (ddd), speed (ff), gusts (Gfmfm), units	27010KT, 32020G45KT
dndndnVdxdxdx	Variable wind direction (min V max)	170V050
VVVV or CAVOK	Visibility (metres) or CAVOK	6000S, CAVOK
RDRDRi/VRVRVRVRi	RVR — Runway, instrument, RVR value, tendency	R27/1200D
w'w'	Present weather phenomena	+SHRA, TSRA, FZFG
NsNsNshs hs hs	Cloud amount (Ns) and base height (hs hs hs)	FEW020, SCT100, BKN250
VV///	Vertical Visibility (sky obscured)	VV///
SKC or NSC	Sky Clear / No Significant Cloud	SKC, NSC
T'T'/Td'Td'	Temperature / Dew Point (°C)	34/27
QPhPnPnPn	QNH pressure (hPa)	Q0999, A3005
REw'w'	Recent weather	RERA (recent rain), RETS
WSDRWYDr	Wind Shear on Runway	WSRWY09, WS ALLRWY
(WT/SS)	Sea Surface Temp / State	W19/S4
RMK	Remarks (appended at end)	RMK...

3. Reporting Met Elements — Detailed Rules

(a) Surface Wind

Direction and Speed reported as: **27010KT/MPS/KMH**
Variable wind (speed < 3KT): **VRB02KT**
Stronger wind — direction changed $\geq 180^\circ$: **VRB10KT**
Calm (less than 1 kt): **00000KT**
Gusty wind (30020 gusting 40KT): **30020G40KT**
Extreme directions (variation $\geq 60^\circ$ and $\leq 180^\circ$): e.g., **270V050**
Wind ≥ 100 KT: reported as **24 0P99KT**

(b) Visibility

- Reported in steps of **50 m** (when vis 0–800 m), e.g., 50, 100, 150...750, 800 m
- In steps of **100 m** when vis is **800 m to 5000 m** — e.g., 900, 1000...4900, 5000 m
- In steps of **1 km** when vis is **5000 m to 9000 m** — e.g., 6000, 7000, 8000, 9000 m
- Reported as **9999** when visibility is ≥ 10 km or more

(c) RVR — Runway Visual Range

RVR observations are made when visibility or RVR < **1500 m**. Reported in steps of:
25 m — when RVR is 000–400 m
50 m — when RVR is 400–800 m
100 m — when RVR is 800–2000 m
RVR **1500–2000 m** is reported under RMK and **not disseminated internationally**.

RVR Tendency Code (i): U = Increasing, D = Decreasing, N = No change

Code i	Meaning
R	R = RVR; DR = Runway; i = tendency in last 10 min
i as N	Nil — as D (decreased)
U	RVR increased
D	RVR decreased
N	No change

When RVR > **1500 m**: reported as **R27P1500U** (prefix P = more than)

RVR below assessable (e.g., below 150m by instrument): **R27M0150** (prefix M = less than)

Join live classes for guided practice and doubt clearing.

(d) Cloud Base — Reported in Steps

- **30 m** — up to 3000 m
- **300 m** — above 3000 m

(e) Cloud Reporting Terms

Code	Octas	Meaning
FEW	1–2	Few
SCT	3–4	Scattered
BKN	5–7	Broken
OVC	8	Overcast
SKC	0	Sky Clear (used at auto stations)
NSC	—	No Significant Cloud

Cloud Layering Rules:

1. Lowest layer reported **regardless of amount** (FEW, SCT, BKN or OVC)
2. Next layer reported when cloud amount is **3/8 or more** (SCT, BKN or OVC)
3. Next layer reported when cloud amount is **5/8 or more** (BKN or OVC)
4. In addition **CB is always reported** whenever observed

(f) Temperature

Involving **0.5°C or more** are rounded up to next higher value. e.g., +2.5°C reported as **03**; -2.5°C as **M 02**.

(g) Pressure (QNH)

Rounded down to nearest whole hectopascal lower value. e.g., QNH 996.6 hPa reported as **QNH 996 hPa**.

Range of pressure over the world is **850 hPa to 1100 hPa**.

(h) Fog (FG)

Reported when visibility is **< 1000 m** due to water drops or ice crystals or both, except when prefixed by MI, BC, PR or VC.

(i) Mist (BR)

Reported when visibility is **1000 m but not more than 5000 m**.

Join live classes for guided practice and doubt clearing.

(j) HZ, SA, DU, FU, VA

Reported when visibility is **5000 m or less**, except SA when specified by DR (Low Drifting).

(k) Present Weather Phenomena (Full List)

Drizzle (DZ), Rain (RA), Snow (SN), Snow Grain (SG), Ice Pellet (PE), Ice (IC), Hail $\geq 5\text{mm}$ (GR), Hail $< 5\text{mm}$ (GS), Fog (FG), Mist (BR), Sand (SA), Dust (DU), Haze (HZ), Smoke (FU), Volcanic Ash (VA), Dust Devil (PO), Squall (SQ), Funnel Cloud (FC), Dust Storm (DS), Sandstorm (SS), Shower (SH), Thunderstorm (TS)

(l) Supplementary Information

Recent significant weather also included in abbreviated plain language. e.g., *WIND 32010 KT, WIND AT 60 M 36025 KT IN APCH OR MOD TURB AND ICE IN CLIMOUT, WS RWY 12.*

4. CAVOK — Definition and Conditions

CAVOK (pronounced KAV-OH-KAY) = Ceiling And Visibility OK
Issued when ALL three conditions are met simultaneously:

1. Visibility $\geq$ **10 km**
2. No clouds of operational significance
3. No weather of significance

CAVOK **replaces** Visibility, RVR, Present Weather and Clouds in METAR.

Minimum Sector Altitude (MSA): The lowest altitude which may be used which will provide a minimum clearance of **300 m (1000 ft)** above all objects located in the area contained within a sector of a circle of **46 km (25 NM)** radius centered on a radio aid to navigation.

Exam Tip — CAVOK Mnemonic: "10-No-No"

Vis $\geq$ **10 km** + No significant cloud + No significant weather $\rightarrow$ CAVOK

5. Criteria for Issue of SPECI

flowchart TD

```
A[SPECI Trigger Criteria] --> B[Surface Wind]
A --> C[Visibility]
A --> D[RVR]
A --> E[Present Weather]
A --> F[Clouds]
A --> G[Temperature]

B --> B1["Direction change ≥60° AND speed before/after ≥10kt"]
B --> B2["Mean speed changed by ≥10kt"]
B --> B3["Variation from mean speed by ≥10kt (gust) AND speed before/after ≥15kt"]

C --> C1["Passes through 800, 1500, 3000 or 5000m"]
D --> D1["Changes or passes 150m, 350m, 600m or 800m"]
E --> E1["Onset/cessation/change in FZ precip, FZFG, MOD/HVY precip, drifting/blowing snow, sand, dust, DS, TS, SS, squall, funnel clouds"]
F --> F1["BKN or OVC at 30, 60, 150, 300, 450m"]
F --> F2["Cloud below 450m changes: SKC/FEW/SCT↔BKN/OVC or BKN/OVC↔SKC/FEW/SCT"]
F --> F3["Sky obscured & vertical vis changes/passes 30,60,150,300m (where laser ceilometer installed)"]
G --> G1["Surface temp increases ≥2°C from last observation"]
```

SPECI Issuance Timing:

For **deterioration** → issued **immediately**

For **improvement** → issued after **10 minutes**

6. SPECIAL Report (India-specific)

In addition to SPECI, a **SPECIAL Report** (in abbreviated plain language) is issued for Height of Base of Clouds and Visibility in India. These are passed to ATC only for their local use and are **not disseminated beyond the aerodrome** of origin:

1. Visibility **2000 or 4000 m**
2. Cloud base **90 or 120 m**, where Ceilograph/Ceilometer exists

7. Explanation of METAR/SPECI Code Groups (Table 25.1 & 25.2)

Visibility Groups

Code	Meaning	Coded As
VVVV Dv	Min Visibility 6000m in South	6000S
VxVxVxVxDv	Visibility <1500m in one direction and >5000 in other then: N, NE, NW	1400SW 6000E / 3000NW
CAVOK	Visibility, Cloud Ceiling, Present Wx better than prescribed values	CAVOK
9999	Visibility 10 km or more	9999

RVR Group

Code	Meaning	Example
R	RVR identifier	R
DRDRDRi/VRVRVRi	Runway, tendency in last 10 min / RVR value / tendency	R27/1200D
i = N (nil)	As D — decreased	—
U	RVR increasing	R27P1500U
D	RVR decreased	R21P1500D
RVR >1500m	Has increased: R27P1500U	—
RVR below instrument	R27M0150	—

Pressure QNH

Code	Meaning	Example
QPhPnPnPn	QNH rounded down to whole hPa	Q0999
APhPnPnPn	QNH in inches (US format)	A3005 = 30.05 inches

Recent Weather (RE)

Code	Meaning
RERA	Recent Rain
RETS	Recent Thunderstorm

Join live classes for guided practice and doubt clearing.

Wind Shear

Code	Meaning
WSRWY09	Wind Shear Runway 09
WS ALLRWY	Wind Shear All Runways

8. TREND Forecast (Landing Forecast)

TREND = Statement of expected significant changes in any one or more of the weather elements: surface wind, visibility, weather and clouds.

When no significant change is expected: **NOSIG**

TREND is **appended to a METAR or SPECI** and is valid for **TWO hours**.

TREND Code Form

TTTTT or NOSIG TTGgg ddfGfmfmKT/MPS/KMH VVVV or CAVOK
TTTTT w'w' or NSW NSNS NS hs hs or V/// or SKC or NSC (RMK)

Change Group (TTTTT)

Code	Meaning
BECMG	Becoming — gradual and permanent change (starts at...UTC, completes at...UTC)
TEMPO	Temporary change for less than one hour AND aggregate of such changes < half period indicated by GGgg. TEMPO lasts < 1 hour; total TEMPO time < half the TREND period.
NOSIG	No Significant Change

TEMPO Rule: TEMPO lasts for less than **one hour** and the aggregate of such repeated changes is **less than half** the period indicated by GGgg.

BECMG: Gradual permanent change — starts at ...UTC and completes at ...UTC.

Time of Expected Occurrence of Change (TTGGgg)

Code	Meaning	Example
FM (From)	From time TL	—
TL (Until)	Until time	—
AT (At)	At exact time	—
GGgg	Time in Hr and Min	eg. 0430, 0800

e.g., BECMG FM1230 TL1300 TEMPO FM0800 | BECMG TL1230 OVC005 | BECMG AT1030 OVC010

Visibility in TREND

Visibility 4000 m in Rain and Showers: **4000 RASH**

CAVOK as in METAR

Weather in TREND (NSW)

NSW = No Significant Weather (used to indicate weather has ceased)

9. W' W' Significant Present & Forecast Weather (Table 25.3)

Qualifier	Description	Precipitation	Obscuration	Other
– Light	MI Shallow	DZ Drizzle	BR Mist	PO Dust/Sand Whirl (Dust Devil)
Moderate (no qualifier)	BC Patches (random, discontinuous coverage)	RA Rain	FG Smoke	SQ Squall
+ Heavy (well developed; substantial coverage)	PR Partial (covers part of aerodrome)	SN Snow	VA Volcanic Ash	FC Funnel Clouds (Tornado or Water Spout)
VC In the Vicinity (not at station, but within 8 km)	DR Low Drifting	SG Snow Grain	DU Widespread Dust	SA Sand Dunes
	BL Blowing	IC Ice Crystals, Diamond dust	SA Sand	SS Sandstorm
	SH Shower	PL Ice Pellets (Sleet)	HZ Haze	DS Duststorm
	TS Thunderstorms	GR Hail ≥5mm		
	FZ Freezing	GS Small Hail <5mm		

Key Notes on W' qualifiers:

FZ (super-cooled water droplets or precipitation) is used with RA and DZ;

DR is used with DU, SA, or SN raised by wind to < 2 m agl;

BL is used with DU, SA or SN raised by wind to ≥ 2 m agl;

MI, BC and PR are used with FG only, e.g., BCFG, MIFG, PRFG

10. hs hs hs Cloud Base Code (Table 25.4)

hs hs Code	000	001	002	003	004	etc.	011	009
Cloud Base m	<30	30	60	90	120	...	330	2970

Each code increment = **30 m** . Code 001 = **30 m** , Code 004 = **120 m** , Code 011 = **330 m** .

Exam Tip: hs hs hs in METAR = cloud base in hundreds of feet × 100 (e.g., FEW020 = FEW at 2000 ft). In TREND, hs hs hs code is given as 3-digit code where each unit = 30 m.

11. Worked METAR/SPECI/TREND Examples

Example SPECI Decoded

```
SPECI VIDP 230300Z 30015G35KT 270V050 1200NW 6000S R27/P1500  
+SHRA FEW020 FEW025CB SCT100 BKN250 34/27 Q1004 RERA WS RWY27
```

Decoded:

SPECI VIDP → Aerodrome Special Met Report for Palam (New Delhi)

230300Z → 23rd day at 0300 UTC

30015G35KT → Surface Wind 300°/15 KT gusting to 35 KT

270V050 → Wind direction varying from 270° to 050°

1200NW → Visibility 1200 m in NW direction

6000S → Visibility 6000 m in South

R27/P1500 → Runway Visual Range R/W 27 more than 1500 m

+SHRA → Weather: Heavy Shower and Rain

FEW020 → Clouds 1–2/8 at 2000 ft

FEW025CB → 1–2/8 CB at 2500 ft

SCT100 → 3–4/8 at 10,000 ft

BKN250 → 5–7/8 at 25,000 ft

34/27 → Temperature 34°C and Dew Point 27°C

Q1004 → QNH 1004 hPa

RERA → Recent Rain

WS RWY27 → Wind Shear Warning for R/W 27

Example TREND Decoded

```
TEMPO FM0830 TL0900 24025G45KT 2000 RATS FEW020 FEWCB025 SCT100  
BKN250 BECMG FM0930 27005KT 6000 NSW.
```

TEMPO FM0830 TL0900 → Temporary from 0830 until 0900 UTC:

Surface Wind 240/25 KT Gusting to 45 KT, Visibility 2000 m in Rain and Thunder Shower, Clouds 1–2/8 at 2000 ft, 1–2/8 CB at 10,000 ft, 3–4/8 at 25,000 ft.

BECMG FM0930 → Becoming from 0930 UTC:

Wind 270/5 KT, Visibility 6000 m and No Significant Weather.

METAR Examples with TREND

```
METAR VIAM 211500Z 33010KT 6000 FEW040 FEW050CB 29/25 Q1004 NOSIG =  
METAR VEGK 1600Z 23015KT 6000 LT FEW010 SCT020CB BKN100 22/Q1002  
TEMPO FM 1630 TL 1725 30015G28KT 2500 TSSH SCT020CB OVC150 =  
METAR VIJO 1230Z 23015KT 5000 SA SKC 37/18 Q1004 BECMG 1314 24015G28KT  
-DS 1500 FEW015 SCT020CB BKN100=  
METAR VIAR 1300Z 25015KT 2500 HZ SKC 39/19 Q1001 BECMG AT1400 25010KT CAVOK =
```

GHOST AVIATOR

Ghost Aviator

GHOST AVIATOR

12. Practice Q&A

Based on METAR: VIDP 160230Z 33005KT 290V050 1500S 5000N R15/P1500U BR FEW020 FEW050CB SCT120 BKN300 32/29 Q1003 REFG TEMPO FM0330 22015G25KT 2500 TSSH FEW025CB SCT100 BKN150 BECMG AT0415 25010KT CAVOK=

Use this METAR / TREND for Questions 1–22

METAR VIDP 160230Z 30005KT 290V050 1500S 5000N R15/P1500U BR FEW020 FEW025CB SCT120 BKN300 32/29 Q1003 REFG
TEMPO FM0330 22015G25KT 3000 +TSRA FEW010 SCT025CB BKN150 BECMG AT0415 27008KT CAVOK=

Q1. The METAR has been issued on day: (a) 15th (b) 16th (c) 17th

✓ Correct: (b) 16th — YY = 16 in YYGGggZ = 160230Z

✗ (a) 15th and (c) 17th are wrong day codes.

💡 YYGGggZ: first two digits = day of month (UTC).

Q2. The METAR has been issued at: (a) 0630 IST (b) 0230 UTC (c) 0230 IST

✓ Correct: (b) 0230 UTC — GGgg = 0230, Z suffix = UTC

✗ IST = UTC + 5:30 hrs. 0230 UTC = 0800 IST, not 0630 or 0230 IST.

💡 Z always = UTC. IST = UTC + 5h 30min.

Q4. Wind direction is varying from: (a) 290 to 050° (b) 050 to 290° (c) 200 to 050°

✓ Correct: (a) 290 to 050° — Variable wind group: 290V050

Join live classes for guided practice and doubt clearing.

✗ The format is always dndndnVdxdxdx = min direction V max direction.

💡 Variable wind direction reported when variation $\geq 60^\circ$ and $\leq 180^\circ$; format = minVmax.

Q5. Visibility 1500 m is towards: (a) N (b) S (c) All over the airport

✓ Correct: (b) S — 1500S = 1500 m in South direction

✗ Direction suffix gives compass bearing of minimum visibility: S = South.

💡 When directional visibility varies, the minimum is reported first with its direction letter appended.

Q6. Visibility towards N is: (a) 1500m (b) 5000 m (c) 3000 m

✓ Correct: (b) 5000 m — 5000N = 5000 m in North direction

💡 Second directional vis group 5000N = visibility towards North is 5000 m.

Q7. Height of base of low clouds above station level is: (a) 2000 ft (b) 2500 ft (c) 2500 m

✓ Correct: (a) 2000 ft — FEW020 = FEW at 020 = 2000 ft (heights in METAR are in hundreds of feet)

✗ METAR cloud heights are in hundreds of FEET, not metres.

💡 METAR convention: cloud height code $\times 100$ = feet AGL. $020 \times 100 = 2000$ ft.

Q8. Runway Visual Range is: (a) 1–2/8 (b) More than 1500m (c) 500–1000m

✓ Correct: (b) More than 1500m — R15/P1500U: P = more than, 1500 = value, U = increasing

✗ P prefix = Plus = more than; M prefix = Minus = less than.

💡 P1500 = RVR exceeds 1500m (instrument upper limit). U = upward tendency.

Q9. RVR is: (a) Decreased (b) Increased (c) Remained same

✓ Correct: (b) Increased — tendency 'U' = Increasing

💡 RVR tendency: U=Up (increasing), D=Down (decreasing), N=No change.

Q10. The poor visibility is due to Present Weather which is: (a) Fog (b) Brown Dust (c) Mist

✓ Correct: (c) Mist (BR) — BR is reported when vis is 1000–5000m

✗ FG = Fog (vis <1000m); BR = Mist (1000–5000m). Here vis = 1500m → BR is correct.

💡 Key split: <1000m = FG (Fog); 1000–5000m = BR (Mist).

Q11. Amount of lowest cloud is: (a) 1–2/8 (b) 2–4/8 (c) 5–7/8

✓ Correct: (a) 1–2/8 — FEW = 1–2 octas

💡 FEW=1–2, SCT=3–4, BKN=5–7, OVC=8 octas.

Q12. Amount of CB cloud is: (a) 1–2/8 (b) 2–4/8 (c) 5–7/8

✓ Answer: (a) 1–2/8 — FEW025CB is a FEW layer of cumulonimbus: FEW means 1–2 oktas.

✗ (b) 2–4/8 and (c) 5–7/8 would be SCT or BKN.

💡 CB is reported as its own group with the usual amount code.

Q13. Height of base of CB is: (a) 2500 m (b) 3000 ft (c) 2500 ft

✓ Answer: (c) 2500 ft — FEW025CB: the cloud base is $025 \times 100 = 2,500$ ft above the aerodrome.

✗ (a) 2500 m confuses feet with metres. (b) 3000 ft does not match the group.

💡 Cloud heights in METAR and TAF are in hundreds of feet.

Q14. The height of topmost layer of cloud is: (a) 3000 m (b) 30000 m (c) 30000 ft

✓ Correct: (c) 30000 ft — BKN300 = $300 \times 100 = 30,000$ ft

✗ Cloud codes in METAR are always in hundreds of feet.

💡 BKN300 = Broken at 30,000 ft (approximately 9000 m = FL300).

Q15. The landing forecast appended to any METAR is valid for: (a) 1 hr (b) 2 hr (c) 3 hr

✓ Correct: (b) 2 hr — TREND (landing forecast) is valid for 2 hours

✗ TAF is valid for 9–30 hrs. TREND is only 2 hours.

💡 TREND = 2 hour validity. BECMG starts and completes within those 2 hours.

Q16. The wind in TREND from 0330 UTC is valid up to: (a) 0400 (b) 0430 (c) 0415

✓ Correct: (c) 0415 — TEMPO FM0330, then BECMG AT0415

💡 TEMPO is valid until the next change group. BECMG AT0415 = change at 0415.

Q17. Expected visibility after 0415 UTC is: (a) 6000 m (b) 3000 m (c) 10 km or more

✓ Answer: (c) 10 km or more — After BECMG AT0415 the trend gives CAVOK, which means visibility of 10 km or more, no significant cloud and no significant weather.

✗ (a) 6000 m and (b) 3000 m are not forecast by the trend.

💡 CAVOK = 10 km or more + no significant cloud + no significant weather.

Q18. The difference between TT and Td is 3°C. The atmosphere is: (a) Very Dry (b) Moist (c) Saturated

✓ Correct: (b) Moist — TT=32, Td=29, spread=3°C → moist but not saturated

✗ Saturated = T-Td ≈ 0; Very Dry = large spread (>10°C); 3°C spread = moist.

💡 T-Td spread: 0 = saturated; 1–3°C = moist; >5°C = drying; >10°C = very dry.

Q20. Just before METAR issued: (a) Rain at obs (b) Rain during last one hour (c) Fog

✓ Correct: (c) Fog — REFG = Recent Fog, not rain

💡 REFG clearly indicates fog was recent. RERA would indicate recent rain.

Q21. Range of pressure as Q1003 is: (a) 1002.5 to 1003.5 hPa (b) 1003.0 to 1003.5 hPa (c) 1003.0 to 1003.9 hPa

✓ Correct: (c) 1003.0 to 1003.9 hPa — Q1003 means pressure was rounded DOWN to 1003, so actual value is 1003.0 to 1003.9

✗ Pressure is rounded DOWN (not rounded to nearest). So Q1003 = actual 1003.0 to 1003.9.

💡 QNH always rounded DOWN to whole hPa. Q1003 → actual pressure = 1003.0 to 1003.9 hPa.

Q22. Temperature reported as 32°C is: (a) 31.4 to 32.3°C (b) 32.1 to 32.4°C (c) 31.5 to 32.4°C

✓ Correct: (c) 31.5 to 32.4°C — temperature is rounded UP to next higher for 0.5°C increments

💡 Temperature involving 0.5°C or more rounds UP. So "32" represents range 31.5–32.4°C.

Q23. Visibility is reported in steps of 50 m when visibility is: (a) 800 m to 5000 m (b) 0 to 800 m (c) 5000 m to 10 km

✓ Correct: (b) 0 to 800 m — steps of 50 m for 0–800 m range

✗ (a) 800–5000m uses 100 m steps; (c) 5–9 km uses 1 km steps.

💡 Visibility step sizes: 0–800m → 50m; 800–5000m → 100m; 5000–9000m → 1km; ≥10km → 9999.

Q24. Visibility reported in steps of 100 m when visibility is: (a) 800 m to 5000 m (b) 0 to 800 m (c) 5000 m to 10 km

✓ Correct: (a) 800 m to 5000 m

💡 100m steps for the 800–5000m range.

Q25. Visibility reported in steps of 1000 m when visibility is: (a) 800 to 5000 m (b) 0 to 800 m (c) 5000 m to 9999

✅ Correct: (c) 5000 m to 9999 — 1 km steps for 5–9 km range

💡 5000–9000m: 1 km steps. Above 10km → 9999.

Q26. Visibility reported 9999 when visibility is: (a) 800 to 5000 m (b) 9000 to 9999 m (c) 10 km or more

✅ Correct: (c) 10 km or more

💡 9999 is a special code meaning ≥ 10 km. It does NOT mean exactly 9999 m.

Q27. Temperature $+2.5^{\circ}\text{C}$ is reported as: (a) 02 (b) 03 (c) 2.5°C

✅ Correct: (b) 03 — $+2.5^{\circ}\text{C}$ rounded UP to 3°C = coded as 03

💡 Rule: involving 0.5°C or more → round UP. $+2.5 \rightarrow 3 \rightarrow$ coded 03.

Q28. Temperature -12.5°C is reported as: (a) -12 (b) -13 (c) M 12

✅ Answer: (c) M12 — -12.5°C is rounded to the next higher value, -12°C , and a negative temperature carries the prefix M: M12.

❌ (a) -12 is the value without the M prefix. (b) -13 rounds the wrong way.

💡 Round .5 upwards (towards zero for negatives), and use M for minus.

Q29. Pressure rounded to nearest whole number in hectopascal: (a) exact value (b) upper value (c) lower value

✅ Correct: (c) lower value — QNH always rounded DOWN

💡 Safety rule: always round DOWN so pilots have slightly lower (safer) pressure value.

Q30. QNH 1002.6 hPa is reported as: (a) Q1002 (b) Q1003 (c) Q1002.6

✅ Correct: (a) Q1002 — rounded DOWN to lower whole hPa

💡 1002.6 → round down → 1002 → Q1002.

Q31. QNH 29.92 inches is reported as: (a) Q2900 (b) A2992 (c) A 3000

✅ Correct: (b) A2992 — A prefix for inches; 29.92 → A2992

💡 Q prefix = hPa (QNH); A prefix = inches of mercury (altimeter setting). A2992 = 29.92 inches.

Q32. Fog is reported when visibility is: (a) <1000 m (b) 1000 m (c) >1000 m

✅ Correct: (a) <1000 m — FG reported when vis <1000 m due to water droplets/ice crystals

💡 FG = <1000m; BR (Mist) = 1000–5000m. This is a key exam boundary.

Q33. Mist is reported when visibility is: (a) <1000 m to 2000 m (b) 1000 to 5000 m (c) >1000 m

✓ Correct: (b) 1000 to 5000 m — BR (Mist) range

💡 BR = British term for Mist = 1000 to 5000 m visibility.

Q34. CAVOK signifies Visibility, Cloud... and present weather better than the prescribed values or conditions: (a) ceiling (b) base (c) amount

✓ Correct: (a) ceiling — CAVOK = Ceiling And Visibility OK

💡 CAVOK full expansion: Ceiling And Visibility OK.

Q35. CAVOK is issued when visibility is: (a) 9–10 km (b) 10 km or more (c) 10 km only

✓ Correct: (b) 10 km or more — CAVOK requires visibility ≥ 10 km

💡 All three CAVOK criteria must be met simultaneously.

Q36. CAVOK is issued when: (i) Vis 10 km or more; (ii) No cloud below 1500m or below highest MSA; (iii) No CB. (a) Any one condition (b) Any two conditions (c) All the three conditions

✓ Correct: (c) All the three conditions — CAVOK requires ALL criteria simultaneously

💡 CAVOK is only issued when ALL conditions are simultaneously satisfied.

Q37. SPECI is issued when: (a) Change in wind dir $\geq 60^\circ$ and speed before/after ≥ 10 kt; (b) Mean speed changed by ≥ 10 kt; (c) Variation from mean speed by ≥ 10 kt and speed ≥ 15 kt. Options: (a)

Any one / (b) Any two / (c) All three

✓ Correct: (a) Any one condition — SPECI issued when ANY one of the surface wind criteria is met

💡 SPECI wind criteria are OR conditions — any single criterion triggers SPECI.

Q38. SPECI is issued when Clouds are BKN or OVC base at 30, 60, 150, 300, 450 m AND cloud amount below 450m changes. (a) Any one condition (b) Any two conditions (c) All the above conditions

✓ Answer: (a) Any one condition — Each cloud criterion for a SPECI is a trigger on its own: any one of them is enough.

✗ (b) and (c) wrongly require two or all of the conditions to occur together.

💡 SPECI criteria are alternatives: any one triggers a report.

Q39. SPECI is issued for vertical visibility, by stations having Ceilograph, when sky is obscured: (a) True (b) False

✓ Correct: (a) True — SPECI is issued when sky is obscured and vertical vis changes or passes 30, 60, 150, or 300 m where laser ceilometer is installed

💡 Vertical visibility SPECI only applies where ceilometer/ceilograph equipment is installed.

Q40. SPECI is issued when surface temperature has increased by: (a) 3°C (b) 4°C (c) 2°C

✓ Correct: (c) 2°C — SPECI when surface temperature increases by $\geq 2^\circ\text{C}$ from last observation

💡 Temperature SPECI threshold = 2°C increase from last observation.

Q41. WSRWY28 indicates that the wind shear has been reported for: (a) take off path (b) approach path (c) both take off and approach paths

✓ Correct: (c) both take off and approach paths — WSRWY (runway) applies to both

💡 WS RWYnn = wind shear on runway nn — covers both take-off and approach.

Q42. R26/M0150 in a METAR indicates that: (a) maximum RVR is 150 m (b) minimum RVR is 150 m (c) 150 m is the lowest RVR instrument can measure and RVR < 150 m

✓ Correct: (c) 150 m is the lowest the instrument can measure and RVR is <150 m — M prefix = less than/below minimum instrument range

✗ (a) P prefix = maximum instrument range; (b) M = below minimum instrument range.

💡 M = Minus = less than. M0150 = actual RVR <150m (below instrument minimum).

13. Master Reference Tables

Critical Numbers — Quick Reference

Parameter	Key Value
METAR issuance	Half-hourly or hourly
SPECI for improvement	After 10 minutes
SPECI for deterioration	Immediately
TREND validity	2 hours
Fog threshold	Vis <1000 m
Mist (BR) range	1000–5000 m
HZ/SA/DU/FU/VA	Vis ≤5000 m
CAVOK vis threshold	≥ 10 km (coded 9999)
RVR observations triggered	When vis or RVR <1500 m
RVR steps 0–400m	25 m
RVR steps 400–800m	50 m
RVR steps 800–2000m	100 m
Cloud base steps ≤3000m	30 m
Cloud base steps >3000m	300 m
QNH rounding	Always DOWN to whole hPa
Temp rounding (≥0.5°C)	UP to next higher
SPECI wind dir change	≥ 60° AND speed ≥10 kt
SPECI mean speed change	≥ 10 kt
SPECI gust variation	≥ 10 kt AND speed ≥15 kt
SPECI vis thresholds	800, 1500, 3000 or 5000 m
SPECI RVR thresholds	150, 350, 600 or 800 m
SPECI cloud thresholds	BKN/OVC at 30, 60, 150, 300, 450 m
SPECI temp increase	≥ 2°C
SPECIAL (India) vis	2000 or 4000 m

Join live classes for guided practice and doubt clearing.

SPECIAL (India) cloud base	90 or 120 m (where ceilometer exists)
MSA clearance	300 m (1000 ft) above all objects
MSA sector radius	46 km (25 NM)
Pressure range world	850–1100 hPa

Mnemonic Sheet

CAVOK = "10-No-No": Vis $\geq 10\text{km}$ + No sig cloud + No sig weather

Cloud cover Mnemonic: "Flock Scatters, Breaks Overcast"

FEW (1-2) → SCT (3-4) → BKN (5-7) → OVC (8)

Vis Steps: "50-100-1k-9999"

0–800m: 50m steps | 800–5000m: 100m steps | 5–9km: 1km steps | $\geq 10\text{km}$: 9999

FG vs BR: "Fog Kills (below 1km), Mist is More (1–5km)"

RVR Tendency: "U-D-N = Up-Down-No change"

P prefix = Plus = more than | M prefix = Minus = less than

QNH Always Down, Temp Always Up (for 0.5°C increments)

SPECI Wind Criteria (any ONE): "60-10-10-15"

Dir change $\geq 60^\circ$ AND spd ≥ 10 | Mean spd change ≥ 10 | Gust var ≥ 10 AND spd ≥ 15