📘 MCQs: ModelSettings & resolve() – Fundamentals of Agentic AI

**1. What is the purpose of ModelSettings in Agentic AI?**

A) To handle exception logging  
B) To configure model parameters like temperature, max tokens, etc.  
C) To validate schemas  
D) To manage agent retries

**Answer:** B  
**Explanation:** **ModelSettings** define **runtime parameters** for LLM execution.

**2. Which of the following is NOT typically included in ModelSettings?**

A) Temperature  
B) max\_tokens  
C) top\_p  
D) Tool function signatures

**Answer:** D  
**Explanation:** Tool definitions are separate from **ModelSettings**.

**3. What does the resolve() method of ModelSettings do?**

A) Validates tokens  
B) Fills in missing parameters with defaults and produces a finalized config  
C) Resolves tool calls  
D) Runs exception handling

**Answer:** B  
**Explanation:** resolve() ensures all model parameters are **normalized and default-filled**.

**4. When is resolve() typically called?**

A) Only at agent creation  
B) Before each model request to finalize effective settings  
C) After run completion  
D) Only during validation

**Answer:** B  
**Explanation:** resolve() runs **before execution** to produce final usable settings.

**5. Why is resolve() important?**

A) It reduces token usage  
B) It ensures consistent, valid model parameters  
C) It increases randomness  
D) It replaces exception handling

**Answer:** B  
**Explanation:** resolve() guarantees **no missing or invalid settings** reach the model.

**6. If a developer sets no temperature in ModelSettings, what does resolve() do?**

A) Throws error  
B) Applies default temperature (e.g., 1.0)  
C) Disables randomness  
D) Ignores temperature

**Answer:** B  
**Explanation:** resolve() auto-applies **default values** where missing.

**7. Which of the following is a valid field in ModelSettings?**

A) retry\_limit  
B) max\_tokens  
C) schema\_version  
D) pipeline\_id

**Answer:** B  
**Explanation:** max\_tokens is a **standard model configuration parameter**.

**8. Which of these best describes temperature in ModelSettings?**

A) Controls how long the model runs  
B) Controls randomness in token selection  
C) Controls API timeout  
D) Controls schema strictness

**Answer:** B  
**Explanation:** **Temperature** adjusts **creativity/randomness** in outputs.

**9. Which field in ModelSettings limits the maximum tokens generated?**

A) top\_p  
B) temperature  
C) max\_tokens  
D) max\_turns

**Answer:** C  
**Explanation:** **max\_tokens** caps the **output length**.

**10. Which of these is a probabilistic sampling parameter in ModelSettings?**

A) top\_p  
B) max\_tokens  
C) retry  
D) schema

**Answer:** A  
**Explanation:** **top\_p** controls **nucleus sampling** for diversity.

**11. What happens if ModelSettings includes conflicting values?**

A) The system crashes  
B) resolve() normalizes and applies consistent rules  
C) Guardrails override it  
D) Tool calls adjust settings

**Answer:** B  
**Explanation:** resolve() ensures conflicts are **resolved with defaults or overrides**.

**12. Which method ensures ModelSettings are runtime-ready?**

A) prepare()  
B) finalize()  
C) resolve()  
D) run\_sync()

**Answer:** C  
**Explanation:** **resolve()** prepares the effective runtime config.

**13. Which of the following is NOT directly influenced by ModelSettings?**

A) Token sampling randomness  
B) Output length  
C) Tool execution retries  
D) Probability cutoff for next-token selection

**Answer:** C  
**Explanation:** **Tool retries** belong to execution config, not ModelSettings.

**14. If you want the model to be deterministic (always same output), what should ModelSettings use?**

A) temperature = 1.0  
B) temperature = 0  
C) top\_p = 1  
D) max\_tokens = 1

**Answer:** B  
**Explanation:** **Temperature = 0** ensures **deterministic outputs**.

**15. Which sampling strategy does top\_p implement?**

A) Beam search  
B) Nucleus sampling  
C) Greedy decoding  
D) Max likelihood

**Answer:** B  
**Explanation:** **top\_p** applies **nucleus sampling**, limiting tokens to top probability mass.

**16. Which ModelSettings parameter is best for reducing hallucinations?**

A) Increase temperature  
B) Lower temperature  
C) Raise max\_tokens  
D) Use higher top\_p

**Answer:** B  
**Explanation:** **Lower temperature** reduces randomness, improving factual accuracy.

**17. Which method would you call to ensure all model settings are filled before execution?**

A) run()  
B) run\_sync()  
C) resolve()  
D) finalize\_run()

**Answer:** C  
**Explanation:** resolve() ensures parameters are **ready for execution**.

**18. What type of object does resolve() typically return?**

A) A new Runner instance  
B) A fully-populated ModelSettings object  
C) A schema dict  
D) A raw string

**Answer:** B  
**Explanation:** resolve() returns **a completed ModelSettings instance**.

**19. Which of these best describes the role of ModelSettings in agent runs?**

A) Context manager  
B) Configuration layer for LLM inference  
C) Guardrail enforcer  
D) Exception handler

**Answer:** B  
**Explanation:** ModelSettings act as the **configuration layer** for inference.

**20. Why separate ModelSettings from Agent logic?**

A) To enforce schema validation  
B) To decouple model parameters from reasoning logic for flexibility  
C) To reduce token usage  
D) To avoid retries

**Answer:** B  
**Explanation:** Separating ModelSettings keeps **configuration modular and reusable**.